

***ATTACHMENT AT WORK:
ITS CONSTRUCT, DISCRIMINANT, AND PREDICTIVE VALIDITY***

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For my Clients

and

For Rachel Eireann, who at age four quite sensibly asked: “But mummy, why do you need to go back to school? You already know how to read!” She has nonetheless put up with this—and me—ever since.

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Abstract

This dissertation is concerned with Attachment Theory (e.g. Bowlby, 1969/82; 1973; 1980) as it may apply to adults at work, with particular attention to the bearing of attachment orientation on management style and job performance.

Chapter 1 provides an overview of attachment theory, existing measures and salient measurement issues; Chapter 2 examines the literature, with a particular focus on adult attachment. Chapters 3-9 present a series of studies that entail testing the construct, discriminant, and predictive validity of a new measure of attachment at work.

Studies 1 and 2 entail preliminary applications of this new adult attachment at work (AAW) inventory, completed by participants from a wide spectrum of work organisations, in part to test the measure's construct validity. Both of these studies also entail preliminary investigation of associations between attachment at work and the 'Big Five' personality factors, as measured with a relatively short (60 item) questionnaire (*NEO-FFI*, Costa & McCrae, 1992). This investigation of discriminant validity is expanded in Studies 3 – 5, through use of the most complete extant version of this personality questionnaire (*NEO-PI-R*, Costa & McCrae, 1992). Taken together, these studies serve in part as vehicles through which to test this measure's concurrent and discriminant validity. Studies 6 and 7 are concerned with the incremental predictive validity of the AAW relative to job satisfaction, job/career potential, and job performance. A final chapter presents results of a meta-analysis of data from the previous studies, and offers conclusions about limitations of the foregoing studies and suggested future directions for this research area.

Note: Study 1 has been accepted for publication in *Advances in Psychological Research*. Study 3 has been accepted for publication in the *Journal of Individual Differences*.

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Chapter 1: Overview of Attachment Theory and Review of Measures

1.1. Introduction

As noted in a biography that is part of a series, *Makers of Modern Psychotherapy*, John Bowlby (1907-1990) has been described as ‘one of the three or four most important psychiatrists in the twentieth century’ (Storr, 1991). Although much of Bowlby’s life’s work concerned practical, socially minded intervention, he is best known for his formulation of attachment theory.

Bowlby’s initial concern was with psychopathology he believed was rooted in major life events such as parental loss or neglect; his aim was to find links between such life events and the development and manifestation of psychiatric disorders. He relied heavily on the experimental efforts of colleagues as collaborators to generate the evidence that supported his ideas. In particular, Bowlby’s theoretical efforts were supported and amplified by the research contributions of Mary Ainsworth. Initially a postdoctoral researcher who joined him at the Tavistock Clinic, Ainsworth is credited by many as attachment theory’s co-founder. “Ainsworth was guided by Bowlby’s theory in nearly every aspect of her study of mothers and their infants, and her observations forced clarification and increased precision in the theory” (Kobak, 1999, p.41). Importantly, Ainsworth’s research shifted the focus of attachment theory away from “gross disruptions” of care, such as might result from bereavement or divorce, toward an emphasis on the subtleties of ordinary parent-child interaction that affect the quality of the attachment bond (Holmes, 1993, p.85).

Although Bowlby regarded attachment as a phenomenon that endures across the lifespan, both he and Ainsworth were principally concerned with children’s ties to their

mothers, and their published work reflects this focal interest (Cassidy, 1999; Rholes & Simpson, 2004). Early on, this focus evoked considerable resistance to the theory from those who viewed it as an instrument of suppression of feminism; in due course political correctness led to the emergence of a sub-strand of research on children's ties to their fathers. (For one summary of 'father attachment' research, see Grossman, Grossman & Zimmerman, 1999.) In any event, the majority of the developing body of attachment-related research retains a focus on early ties. Specifically, most of the 2000-odd publications accessed in a literature review conducted at the end of the 20th century deal primarily with attachment in infancy and childhood (Cassidy & Shaver, 1999).

The two chapters that follow endeavour to convey the range of attachment theory and associated research, to date. However, this review does not reflect the proportional focus on infancy and childhood that remains present in this body of work. Because the purpose of this review is to lay the groundwork for the conduct of attachment-related research amongst adults in the workplace, a deliberately disproportionate degree of attention is given to those elements of the evolving field of attachment that are primarily concerned with adults.

This first chapter is organised into two sections (following this introduction): first a review of attachment theory per se, examining key elements of this expansive theory as it is currently understood; then a review of measures employed in assessing attachment, with a principal focus on those utilised to assess adult attachment; however, because of its pre-eminence in the field, 'the strange situation' (Ainsworth, Blehar, Waters, and Wall, 1978), is first of all examined in some detail. The second chapter focuses on content within the emerging literature on adult attachment that is viewed as having particular

relevance to the proposed investigation of attachment in the workplace. Together, these two chapters are intended to provide conceptual and methodological context for the seven studies reported in the three chapters that follow, and reviewed in the concluding chapter of this thesis.

The increasingly voluminous attachment literature is evidence of burgeoning, wide-ranging interest in attachment theory and its application. The *Handbook of Attachment: Theory, Research, and Clinical Applications*, edited by Jude Cassidy and Phillip R. Shaver, was first published in 1999. This 900+ page book has proved a substantial and valuable source for the literature review that follows; the emergence of such a handbook is also indicative of the growth and breadth of the attachment field. An additional source for some of the more recently published attachment-related material reviewed herein is the relatively new journal, *Attachment and Human Development*, edited by Howard Steele with Jude Cassidy; this journal also first saw publication in April 1999. The journal's April, 2002 issue includes a brief (4 page) review of the *Handbook*, in the year when the latter was reissued in paperback. The review concludes:

whatever...attachment-related question one has, there is likely to be a chapter in the *Handbook* that will provide some answers, and refine one's questioning. This volume is still, by far, the best single resource in our field (Steele, 2002, p.128).

More recently yet, two other publications have appeared that have been of particular value in the present endeavour. The first, published in 2004, is *Adult Attachment: Theory, Research, and Clinical Implications*, W. Steven Rholes and Jeffry A. Simpson, editors. Amongst its various contributions, this review of the adult attachment literature includes a cogent treatment of the fact that two largely separate lines of adult attachment research have developed over the past twenty years, with an associated and as yet unresolved

debate as to whether the same or different domains are being measured by them. This is not a new concern (e.g., Main, 1999; Shaver & Mikulincer, 2002); its lack of resolution and continued re-emergence in the attachment literature warrants note, and will be revisited in the second section of this chapter. The second recently published resource, published in 2005, is *The Development of the Person: The Minnesota Study of Risk and Adaptation from Birth to Adulthood*, authored by L. Alan Sroufe, Byron Egeland, Elizabeth A. Carlson, and W. Andrew Collins. This book reports on a 30-year longitudinal study of 180 children, which traces their development from the prenatal period to adulthood. More effectively than any treatise on the topic, this work illuminates the limitations of point in time studies. Moreover, rather than simply determining whether, and to what extent, characteristics at one point in time predict characteristics at another—which over a 30 year period would have been a feat in itself—these researchers have examined the whole process of development, investigating why and how adaptation occurs, when it does. As the authors note, “Bowlby’s theory became prominent just before we began our work and was the most direct inspiration for our long-term study (e.g. Bowlby, 1969/1982)” (Sroufe et al, 2005, p.35).

1.2. Overview of Attachment Theory

John Bowlby’s early interest in the impact of disruption in the relationship between mother and child on the development of the child, his ongoing and evolving interest in the tie between child and mother, and his dissatisfaction with secondary-drive theories to explain this tie, led to the formulation of Attachment Theory (Cassidy, 1999). Bowlby originally introduced this theory in a series of papers (Bowlby 1958, 1960a, 1960b) that provided “the first basic blueprint of attachment theory” (Bretherton, 1992, p.

762). He subsequently elaborated upon these ideas in his trilogy, *Attachment and Loss* (1969/82; 1973; 1980).

As explained by his biographer, Holmes:

Bowlby's earlier work had shown that separated or bereaved children experienced, no less than adults, intense feelings of mental pain and anguish: yearning, misery, angry protests, despair, apathy and withdrawal. He had shown too that the long-term effects of these separations could...be disastrous, leading to neurosis or delinquency in children and adolescents, and mental illness in adults. In separating parent from child [as Bowlby saw it] a delicate mechanism had been disrupted, a fundamental bond broken linking one human being to another. What is the nature of that bond, and how does it develop? These were the questions Bowlby set out to answer.

...Psychoanalysis offered two different accounts of the infant-mother bond: drive theory and object-relations theory. For Bowlby, both Freud and Klein failed to take the all-important step of seeing attachment between infant and mother as a psychological bond in its own right, not an instinct derived from feeding or infant sexuality, but *sui generis* (Holmes, 1993, p.63).

Dissatisfied with the virtually exclusive focus on one's inner world of the psychoanalytic theories on offer, Bowlby took an informal, multi-disciplinary approach in his search for a satisfactory explanation to his questions. He initiated discussions with colleagues in a wide range of fields—including evolutionary biology, ethology, developmental psychology, cognitive science, and control systems theory—and pursued the reading recommendations that emerged in these discussions. Bowlby eventually drew upon all of these fields in his formulation of attachment theory. The theory's fundamental premise is that the infant's tie to the mother results from a biologically based desire for proximity that arose through the process of natural selection (Cassidy, 1999).

Within the *Handbook of Attachment* (1999), the first five chapters serve as what the editors describe as "an updated primer on the theory" (Cassidy & Shaver, 1999, p.xi).

The first of these, *The Nature of the Child's Ties*, approximately corresponds to the first volume of Bowlby's trilogy, *Attachment and Loss* (Bowlby, 1969/82; 1973; 1980); Cassidy, one of the editors and also this chapter's author, here focused on the central construct of attachment. She discussed attachment's biological bases, which she regarded as the most fundamental aspect of the theory; identified key aspects of the attachment behavioural system, and differentiated between the attachment and other behavioural systems, including the relationships between these systems; distinguished between attachment bonds and other affectional bonds; and gave some consideration to the matter of multiple attachments.

In the child,

'Attachment behavior' has the predictable outcome of increasing proximity of the child to the attachment figure (usually the mother). Some attachment behaviors (smiling, vocalising) are signaling behaviors that alert the mother to the child's interest in interaction, and thus serve to bring her to the child. Other behaviors (crying) are aversive, and bring the mother to the child to terminate them. Some (approaching and following) are active behaviors that move the child to the mother (Cassidy, 1999, p.4).

The premise is that because human infants develop slowly, remaining helpless for a relatively lengthy period, they are dependent upon their caregivers for survival. Thus the disposition for infants to organise their behaviour in ways that would promote caregiver proximity and maximise caregiver protection when needed derives from biological needs, and was selected through evolution (Cassidy, 1999; Sroufe et al, 2005).

A key aspect of the attachment behavioural system as a concept is that behaviours are organised to provide flexible responses to changing internal and external cues.

Many behaviors can serve the attachment system, and no behavior is exclusively attachment behavior. If one behavior fails in the aim of achieving proximity (the infant calls but the caregiver does not come), another may be used (the infant

raises its arms). Likewise, with development, as new behaviors become available, the infant shows increasing flexibility, readily replacing less differentiated reactions (crawling to the caregiver vs. simply crying when aroused at an earlier age)” (Sroufe et al, 2005, p.35).

As Cassidy noted, attachment theory applies a control systems perspective to account for the child’s ability to maintain the proximity to the mother desired depending upon the circumstances. Bowlby regarded this behavioural homeostasis as analogous to the process of physiological homeostasis, whereby physiological systems (e.g., blood pressure and body temperature) are maintained within set limits. In the case of attachment, “the set limits concern the organism’s relation to features of the environment, and the limits are maintained by behavioural rather than physiological means” (Bowlby 1969/82, p.372).

Other key aspects of the attachment behavioural system noted by Cassidy in her *Handbook* chapter include the roles of context, emotion, cognition, and individual differences. With regard to context, the child’s desired degree of proximity to the parent will differ in differing circumstances, which may be to do with conditions of the infant (e.g., illness, fatigue, hunger) and/or of the environment (e.g., an unexpected noise; the arrival of a stranger). In all cases, “the infant is viewed as using the mother as a ‘safe haven’ to return to in times of trouble. In sum, proximity-seeking is activated when the infant receives information (from both internal and external sources) that a goal (the desired distance from the mother) is exceeded” (Cassidy, 1999, p.6); however, the nature of the caregiver response required to quell attachment behaviours will vary depending upon the degree to which the attachment system has been activated. Accounting for context becomes all the more important—and challenging—for researchers endeavouring

to study attachment in relation to the developing person (Solomon & George, 1999; Sroufe et al, 2005).

The role of emotion is important in attachment theory both because initial adaptations set the direction for later development and affect sense-making of later experience, and because infants' early, preverbal experience is now thought to be encoded and carried forward with little alteration (Sroufe et al, 2005). In her treatment of the role of emotion, Cassidy (1999) cited original source material that also clearly supports Bowlby's conceptualisation of attachment as life spanning:

Many of the most intense emotions arise during the formation, the maintenance, the disruption, and the renewal of attachment relationships. The formulation of a bond is described as falling in love, maintaining a bond as loving someone, and losing a partner as grieving over someone. Similarly, threat of loss arouses anxiety and actual loss gives rise to sorrow; whilst each of these situations is likely to arouse anger. The unchallenged maintenance of a bond is experienced as a source of joy (Bowlby, 1979, p.130).

This commentary of Bowlby's underscores an essential premise of the theory, which is that attachment develops in the form of bonds or ties between two people (in the first instance, infant and caregiver). Whilst, as later discussed, attachment takes hold in ways that are manifest in distinguishable patterns, thought to be reflective of different mental representations, these are thought always to be reflective—certainly foundationally—of the nature of the relationship, rather than the individual, and, more precisely, of the caregiving experienced by the infant in response to that infant's attachment behaviour. The particular passage of Bowlby's quoted above has also been referenced by contributors to the sub-strand of the adult attachment field, considered later in this review, that has come to be known as 'romantic attachment' (e.g., Shaver & Hazan, 1987).

Bowlby drew upon cognition theory to theorise that individuals use their experiences—rather than, as Freud theorised, their internal fantasies—to create ‘internal working models’ (Bowlby, 1969/82). According to Bowlby, these cognitive models allow individuals to anticipate the future and make plans, but must be grounded in reality and kept up to date to serve effectively (Bowlby, 1980). He called them ‘working’ models because they remain open to revision; however, he theorised that although not immutable, once formed they were likely to be self-reinforcing. These models are thought to form early; toddlers have been found to manifest distinguishable patterns of behaviour, in relation to their respective caregivers, associated with distinct, specific models (Ainsworth et al, 1978). Working models are thought to become internalised by the age of three, and thereafter systematically affect attachment relationships. “Internal working models of attachment...shape the manner in which the attachment system is expressed by directing cognitive, affective, and behavioral response patterns in attachment-relevant contexts” (Collins, Guichard, Ford, & Feeney, 2004, p.196). In adults, “working models operate at the intersection of past experiences, new experiences, and revised conceptualizations of the past” (Rholes and Simpson, 2004, p.8). As discussed hereafter, both the extent to which attachment orientation becomes trait-like in adults, and moreover the extent to which it is measured as if it were a trait, are sources of debate within the field (e.g., Kobak, 1999; Davila & Cobb, 2004).

Bowlby predicted, early in his work, that “the extent to which the mother has permitted clinging and following, and all the behavior associated with them, or has refused them” is the important factor that accounts for differences in attachment quality (Bowlby, 1958, p.370).

Whereas nearly all children become attached (even to mothers who abuse them; Bowlby, 1956), not all are securely attached. Striking individual differences exist. Secure attachment occurs when a child has a mental representation of the attachment figure as available and responsive when needed. Infants are considered to be insecurely attached when they lack such a representation (Cassidy, 1999, p.7).

Left somewhat ambiguous, at least in Cassidy's (1999) treatment, is the role of the caregiver in protecting the infant from threats of which the latter may be unaware. In the modern, western world, such caregiving seems likely to be manifested in terms of discipline and boundary setting, which are unlikely—at least consciously—to be experienced by the developing child as responsive to his or her security needs. What is clear is that, according to attachment theory, infants whose early experience is of effective dependence develop to be more effectively self-reliant than infants whose early attachment behaviour does not elicit consistent responsiveness from their caregivers (Sroufe et al, 2005). The causes and effects of individual differences in attachment security are at the heart of the theory and its application; specific differences are discussed in detail later in this review.

Bowlby considered the attachment behavioural system in relation to two other biologically based behavioural systems, although he devoted far more attention to the first than to these others. The exploratory behavioural system provides information about the workings of the environment. In attachment research, exploration has been operationalised as play, discovery, creation, or (in adults) has been postulated to include traveling, developing hobbies, working toward important personal goals, developing new friendships, working (Feeney & Collins, 2004). Some of these operationalisations may in fact be suspect, operating coincidentally with rather than in dynamic relation to attachment. According to attachment theory, true exploration tends to occur only when

the attachment system is deactivated. The fear behavioural system, like the attachment behavioural system, has protection as its biological function. According to attachment theory, the exploratory and fear behavioural systems, operating in dynamic equilibrium, are significant for development and survival (Ainsworth, 1972, p.118).

The attachment behavioural system must also be distinguished from the sociable (or affiliative) system. Cassidy (1999) noted that although Bowlby did not go into great detail about this latter system, he did observe, about it, that:

...Under this heading are classed all manifestations of friendliness and goodwill, of the desire to do things in company with others. As such it is a much broader concept than attachment and is not intended to cover behaviour that is directed towards one or a few particular figures, which is the hallmark of attachment behaviour (Bowlby, 1969/82, p.229).

Cassidy cited research that clearly shows differences between the attachment and the sociable systems in what activates and terminates behaviour, and in the way behaviours are organised; based upon both Bowlby's theorising and this research, she concluded that the sociable system is most likely to be activated when the attachment system is not (Cassidy, 1999, p.9).

Although Bowlby's principal focus was on children's ties to their mothers, he recognised that further understanding of attachment could be gained from examination of the parental side of the 'attachment-caregiving social bond' (Bowlby, 1969/82). Cassidy proposed that "the term 'caregiving system' be used to describe a subset of parental behaviors—only those behaviors designed to promote proximity and comfort when the parent perceives that the child is in real or potential danger" (Cassidy, 1999, p.10). Both the attachment system and the caregiving system have parent-child proximity as the predictable outcome of their activation; likewise, both systems share the biological

function of protection of the child. Parent and child may work together to maintain a comfortable degree of proximity, so that when the caregiving system is relatively activated the attachment system need not be, or not, at any rate, to a level that triggers attachment behaviour. “This ‘dynamic equilibrium’ contributes to understanding the notion of the mother’s providing ‘a secure base from which to explore’” (Bowlby, 1969/82, p.236). Recently it has been noted that research on caregiving in the context of adult attachment relationships tends to focus on the ways that partners may provide one another with reassurance and comfort during times of stress, but could and should also investigate how they may support one another’s personal growth and autonomy (Feeney & Collins, 2004). Such research would presumably serve as a most effective investigation of attachment theory if it tracked and examined the dynamics between these two forms of support.

Unlike attachment behaviour, which is generally regarded as situation-specific, attachment bonds are thought to be enduring. Within the more general class of bonds referred to as affectional bonds, attachment bonds meet all five criteria for affectional bonds, and one more. An affectional bond is defined as:

- persistent, not transitory
- involving a specific person, a figure not interchangeable with others
- indicative of an emotionally significant relationship
- associated with an individual’s wish to maintain proximity to/contact with the other
- associated with distress when proximity is prevented

In addition, an attachment bond meets the criterion that the individual seeks security and comfort in relationship with the other—whether or not this security is attained (Ainsworth, 1989). As Cassidy noted, “the relationship is considered ‘secure’ if one achieves security and ‘insecure’ if one does not; it is the *seeking* of security that is the

defining feature” (Cassidy, 1999, p.10). As a corollary, strength of attachment behaviour should not be confused with strength of an attachment bond.

To equate strength of attachment with strength of attachment behavior under ordinary nonstressful circumstances would lead to the conclusion that an infant who explores when his mother is present is necessarily less attached than one who constantly seeks proximity to his mother, whereas, in fact, his freedom to explore away from her may well reflect the healthy security provided by a harmonious attachment relationship (Ainsworth, 1972, p.119, as cited in Cassidy, 1999, p.13).

Bowlby made clear his view that the parent-child relationship is not exclusively that of attachment caregiving; rather, he saw attachment as the trump card, “the shared dyadic program given top priority” in this relationship (Bowlby, 1969/82, p 378). Also, and importantly, an attachment bond cannot be presumed simply because a relationship has an attachment component to it. A distressed child may manifest attachment behaviour toward a friendly stranger, but the departure of this stranger, or even of a peer with whom there has been ongoing relationship, will not ordinarily have the devastating effects on the child that the loss of a true attachment figure has. “Thus, even though children may at times turn to friends for comfort (Hazan & Zeifman, 1994), these friendships need not be essentially attachment relationships” (Cassidy, 1999, p.14).

Attachment theory posits that infants tend to form more than one attachment, but that the number of attachment figures is not limitless. Bowlby termed the strong tendency of infants to prefer one principal attachment figure for comfort and security ‘monotropy;’ others’ observational research has shown that, in the primary caregiver’s absence, an infant is likely to seek and derive comfort and security from other attachment figures (ibid). Collins and Read (1994) have suggested that in adults working models of attachment may be conceptualised as a hierarchy, wherein the default model, at the top, corresponds to the most general representations about self and others, derived from a

history of experience with ‘key’ attachment figures; further down the hierarchy are domain-specific models that correspond to particular types of dyad relationships (e.g., parent-child; romantic partnership). Hierarchical models are hypothesised to be conceptually distinct, but associated (Collins et al, 2004).

Throughout Cassidy’s ‘updated primer on the central construct of attachment’ she pointed out areas requiring further research and summarised areas of continuing debate; she also occasionally offered her own explanations for aspects of attachment yet to be explored. These last do not always have quite the same ‘ring of truth’ about them as does the work that she has summarised. In her relatively lengthy treatment of the caregiving system, for example, Cassidy speculated about why a parent would continue to seek to comfort a child no longer perceived to be in danger, and hypothesised that the function of continued soothing behaviours is to enable identification of further threats not yet perceived by the parent (Cassidy, 1999, p.11). While this might well be one motivation for such behaviour, Cassidy’s explanation fails to take into consideration that the parent may have a need for the child to be calm and settled, in order to feel calm and settled him/herself. In other words, these behaviours could be a manifestation of the psychological construct of ‘attunement’ (Stern, 1985), a concept that is addressed elsewhere in the Handbook (see Chapter 26, *Psychoanalytic Theory from the Viewpoint of Attachment Theory and Research*, Fonagy, 1999).

Implicit in Cassidy’s (1999) consideration of the attachment behavioural system is the endurance aspect of the theory. Because her focus was childhood, the individual’s capacity to adjust to changes in time and circumstance were examined solely in terms of development between infancy and childhood, and so provided only limited support for

Bowlby's stance that attachment is a life-spanning phenomenon. What she has made clear is the theory's premise that on the one hand the formation of attachment relationships stem from biological survival instinct, and on the other, the nature of the attachment bonds thereby formed is shaped by the interpersonal experiences between, in the first instance, children and their caregivers. The view that differences in temperament may account for different attachment patterns in young children has been investigated and tends not to have been substantiated (Sroufe, et al, 2005; Vaughn & Bost, 1999).

Kobak (1999) examined Bowlby's early work on maternal deprivation, noting its controversial impact on both social service and social policy, on the one hand, and psychoanalytic theory, on the other (ibid, p.23). The author acknowledged Bowlby's persistence and originality, and likewise that of his research colleagues, citing for example Robertson's films documenting the effects of separation on children. The power of these films, along with Bowlby's writings, catalysed change in hospital practice (ibid, p.25).

Kobak identified a major dilemma of Bowlby's early attachment work, viz., that reliance on the need for physical proximity to account for attachment security and anxiety restricts the theory in terms of both lifespan and clinical implications (Kobak, 1999, p.21). To deal with this theoretical dilemma, Bowlby placed increasing weight on the importance of cognitive processes on the one hand, and the availability and responsiveness of attachment figures on the other. As Kobak has noted, the importance of cognitive appraisals becomes clear in the context of Bowlby's consideration of individual differences in susceptibility to fear. Bowlby defined caregiver responsiveness in terms of a parent's willingness to act as a comforter and protector *when a child is*

afraid (italics, this reviewer's). Bowlby then coined the term 'availability' to encompass both accessibility *and* responsiveness. Three critical propositions follow, the second of which, in particular, seems to be at the root of contentions about the developing adult attachment literature, as discussed hereafter:

1. When an individual is confident that an attachment figure will be available to him whenever he desires it, that person will be much less prone to either intense or chronic fear than will an individual who...has no such confidence.
2. Confidence in the availability of attachment, or lack of it, is built up slowly during the years of immaturity—infancy, childhood, and adolescence—and whatever expectations are developed during those years tend to persist relatively unchanged through the rest of life.
3. The varied expectations of the accessibility and responsiveness of attachment figures that different individuals develop during their years of immaturity are tolerably accurate reflections of the experiences those individuals have actually had (Bowlby, 1973).

As Kobak (1999) noted, while extensive work has been and continues to be done in the cognitive arena relative to attachment, this has led to a preponderance of focus on internalised features of personality. In particular, he cited two measures of attachment—the Adult Attachment Interview, or AAI (George, Kaplan, & Main, 1985), and Hazan and Shaver's (1987) self-report measure of romantic attachment styles—that have precipitated a plethora of research on attachment post-childhood. Both of these measures were designed to assess adult patterns of attachment aligned with the three patterns of infant attachment identified by Ainsworth in the 'strange situation'. (All three of these measures are described in the methods section of this review.) Kobak asserted that both adult measures, and the research associated with them, are essentially reflective of a personality model of attachment, in which continuity with infant patterns of attachment is emphasised, and the focus is exclusively on Bowlby's construct of internal working models (Kobak, 1999, p.39). As Kobak pointed out, this approach tends to neglect

current attachment relations and behaviours and, moreover, Bowlby's assertion that the nature of current attachment relationships continues to be the major factor in whether a child or adult is in a secure, anxious, or distressed state.

The emphasis on attachment as a relationship construct contrasts with a model suggesting that attachment security is largely determined in infancy and becomes an internalized part of personality. Although few attachment researchers explicitly endorse such a model, it implicitly informs many attachment studies (Kobak, *ibid*, p.40).

In fact, Kobak has recently contributed, himself, with colleagues, to the literature on adult separation, in particular, employing an approach that attends to adults' current circumstances (Kobak, Cassidy, & Zir, 2004). As these authors noted, although what constitutes a threat to the availability of an attachment figure transforms radically as the child develops, extreme events that are appraised as such threats continue to evoke intense fear and anxiety in adolescents and adults. The authors examined adult trauma from this perspective, giving particular consideration to what, from an attachment perspective, may enable or serve as a barrier to resolution of traumatic events, as well as to the implications, including trans-generational implications in cases where trauma or loss are unresolved (*ibid*).

Marvin and Britner reiterated Kolbak's (1999) concern about the shortcomings of attachment research during the 1980's and 1990's. Whilst applauding the extent to which the study of individual differences has contributed to our understanding of different attachment strategies, the authors noted that preoccupation with this focus has been at the expense of exploring the ontogeny of attachment. "It will only be through the study of individual pathways *through the course of development* that we will truly understand the origins, nature and sequelae of this bond" (Marvin & Britner, 1999, p.45).

These authors proceeded to offer a conceptualisation of the development of attachment across the lifespan. They drew upon Bowlby's original theory; an elaboration provided by one of these same authors, with colleagues, regarding developmental changes during the pre-school years; and to a lesser degree others' contributions regarding possible further developmental changes during later childhood, adolescence, and adulthood. They considered four 'stage changes' identified by Bowlby. These have elsewhere been characterised as:

preattachment (approximately 0-2 months of age): infants are inherently interested in, responsive to, and adept at eliciting social contact and relatively open to interactions with and accepting care from almost anyone; *attachment in the making* (2-6 months): infants begin to discriminate among caregivers by preferentially directing social signals and responding differentially to certain individuals; *clear-cut attachment* (beginning at 6-7 months): all of the behaviors that define attachment are evident, and these are organized around a particular caregiver; *goal-corrected partnership* (around 36 months): children have less urgent needs for physical proximity and are able to negotiate with caregivers regarding separations and availability (Hazan, Gur-Yaish, & Campa, 2004, p. 56).

The fact that even the fourth stage, which Bowlby indicated was 'probably the last...in the ontogeny of attachment' (Martin & Britner, 1999, p.62), comes so early in the normal lifespan is one likely factor in the tendency for much of the research on adult attachment to appear personality-focused.

Martin and Britner (1999) noted a tendency in lifespan developmental, social, and clinical psychology to base research on the assumption that the adult pair bond is a direct outgrowth of the earlier child-parent attachment-caregiving bond. In the field of attachment research, Martin and Britner pointed to Hazan and Shaver's (1987) hypothesis that one's history of relationships with early attachment figures produces a trait-like 'style' for involvement in later close relationships (Marvin & Britner, 1999, p.63). Hazan and others continue to cite as evidence that long-term adult partners qualify as attachment

bonds the similarity between the adult's grieving process over the death of a spouse and the separation distress behaviour associated with attachment in infancy and childhood (Hazan et al, 2004). The notion of parallels between child-parent and adult pair bonds was recognised prior to Bowlby. However, Bowlby argued "for shifting the emphasis from taking for granted the similarities to taking for granted the differences between the two behavioral systems...because [these systems] are activated and terminated by different conditions, because they are directed toward different objects, and because they have different sensitive phases in their development" (Bowlby 1969/82, cited in Marvin & Britner, 1999, p.64).

Ainsworth suggested at least three behavioural systems involved in sexual pair bonds: the reproductive, attachment, and caregiving systems (e.g., Ainsworth, 1990). To these, Martin and Britner (1999), like Cassidy (1999) suggest adding the sociability behavioural system.

This complex bond does not develop directly out of the individual's earlier attachment behavioral system...it develops instead through a complex systemic process involving the coordination and organization of multiple behavioral systems, with changes in activating and terminating conditions, into a more complex, functional whole. We are convinced that unless these principles of development are applied, the study of adult pair bonds will remain as naïve as the psychoanalytic and social learning theories of the infant-parent bond in opposition to which Bowlby initially developed his theory (Marvin and Britner, 1999, p. 64).

The authors also considered the importance of attachment behaviour throughout the period of aging. "The changes over this period—including possible 'uncoupling' of some of the systems that have become progressively coupled earlier in development; individual differences in attachment patterns among the aged; and the conflict the aged must experience between wanting to be protected and still wanting control over their own lives—will all be important research questions reflecting Bowlby's belief that attachment

behavior functions ‘from the cradle to the grave’”(Marvin & Britner, 1999, p.65). In their conclusion the authors assert, “We are convinced that Bowlby’s attempt to integrate the study of individual differences with that of normative development is as important today as it was 40 years ago” (ibid). Certainly it would seem that the ever-increasing population of older adults invites research on and increased understanding of the function of attachment in the elderly. Indeed, the journal *Attachment & Human Development* (Steele & Cassidy, eds.) recently devoted an entire issue to the topic of Attachment and aging (ibid, 2004).

Weinfield, Sroufe, Egeland & Carlson (1999) explored how differences in attachment relationships develop, and examined the nature of these differences. The authors distinguished between *presence* and *quality* of an attachment relationship, noting that children will be unattached only in circumstances where there is no stable interactive presence (ibid, p.68). Individual differences in quality neither arise suddenly nor derive solely from the traits of either the infant or the caregiver, but rather are built out of a history of interactions within the dyad that reveals the underlying character of the relationship as essentially either “secure” or “insecure” (ibid, p.69).

Secure relationships promote infants’ exploration of the world and expand their mastery of the environment, because experience tells such infants that if the exploration proves unsettling, they can rely on their caregivers to be there and alleviate their fears. Infants with secure attachment relationships are confident in the sensitive and responsive availability of their caregivers, and consequently these infants are confident in their own interactions with the world.

...Infants with [insecure] attachment relationships have not experienced consistent availability of and comfort from their caregivers when the environment has proven threatening. Bids for attention may have been met with indifference, with rebuffs, or with notable inconsistency (Ainsworth et al, 1978; Bowlby, 1973). The result of such histories is that these infants are anxious about the availability of their caregivers, fearing that the caregivers will be unresponsive or ineffectively responsive when needed [and] may also be angry with their caregivers for this

lack of responsiveness...Bowlby (1973) speculated that angry reactions may have evolved [to] punish caregivers for unresponsiveness, and...to discourage caregivers from further unresponsiveness (Weinfield et al, 1999, p.70).

Much of this chapter was devoted to consideration of the antecedents of attachment relationships of varying quality and descriptions of these differences, and includes a review of the associated research. The original application of 'the strange situation' (Ainsworth et al, 1978) and replications were reviewed; the two forms of "insecure" attachment originally revealed through this methodology—"avoidant" and "resistant"—and a third form subsequently identified—"disorganized/disoriented"—were described and discussed; and a wide range of home observational studies and their findings were considered.

Weinfield et al (1999) also gave considerable attention to the likely consequences of differences in attachment security for an individual's development, particularly personality development.

Responsiveness by caregivers (and the ensuing confidence in that responsiveness) is more than a foundation for the developing parent-child relationship. The model of parent as responsive is inevitably associated with a complementary model of the self as effective, since the child is predictably effective at eliciting [the desired] parental response. By generalization, this pattern of responsiveness also leads to the idea that relationships may be a context in which needs are met. Thus there are implications for later efficacy, self-esteem, and involved social relationships (ibid, p.71).

The authors noted that, according to Bowlby, these early attachment relationships influence rather than wholly predetermining subsequent development. Bowlby drew upon Waddington's (1957) pathway model to theorise that change is possible, but is constrained by prior adaptation (Weinfield et al, 1999). The authors of this chapter offered four possible explanations for why early attachment relationships influence later development, and suggested that all may play a part in the continuing influence of

attachment (ibid, p.75). These are: that experiences within the early attachment relationship *influence the developing brain* (e.g., Schore, 1994); that the early attachment relationship serves as a *foundation for learning affect regulation* (e.g., Sroufe, 1979, 1996); that through interacting with and observing an attachment figure an infant *learns about how to behave in a relationship* (e.g., Elicker et al, 1992); and that representations—what Bowlby refers to as “internal working models”—developed from early experiences *guide the child’s subsequent expectations and behaviour* (Bowlby 1969/82).

As Weinfield et al noted, Bowlby proposed that early differences in attachment do not directly *cause* later differences in functioning; rather, they initiate pathways that are probabilistically related to certain later outcomes (Weinfield et al, 1999, p.75; italics the authors’). From an application perspective this is a crucial aspect of the theory. Sroufe expanded on this aspect with his developmental-pathways model:

In this model, individual differences in infant attachment...are viewed in terms of distinctive developmental trajectories that, though requiring support for their maintenance and remaining open to modification, nonetheless embody a ‘homeorhetic’ tendency; that is, a direction once set is itself an influence on developmental course...

Stability of the surrounding environment is certainly a partial explanation for the stability of individual differences. There is, however, a transaction between individual history and environment. One reason why change away from maladaptive behavioral patterns is difficult is that the environment itself is influenced by the individual; it does not simply wash over the person as an independent force. Individuals select, elicit, and interpret particular reactions from the environment that are consonant with their experience-based history of adaptation (Sroufe, 1997, 1983, cited in Weinfield et al, 1999, p.82).

Weinfield et al (ibid) illustrated this point through the case of avoidant attachment—that is, the form of “insecure” attachment where, in Ainsworth’s ‘strange situation,’ the child is unlikely to manifest distress upon separation from the parent, turns

away or moves away from the parent upon reunion, and plays without animation (e.g., Steele, 2002).

If such children encounter responsive peers and teachers, countering the rejection they have experienced previously, in time one would expect changes in their working models of self and relationships. Such environmental inputs become less likely, however, because children with these histories are more likely to isolate themselves (Sroufe, 1983), to interpret the ambiguous or even supportive efforts of others as hostile (Suess et al, 1992), and to be rejected by both peers and teachers...perhaps because of their cool defiance or aggression toward vulnerable children (Sroufe & Fleeson, 1988)...It is because children have a role in creating their own later experiences that describing individual history and stability of the environment as completely separate influences is unduly simplistic (Weinfield et al, 1999, p.82).

Whilst this explication provides a credible 'feel' for how the developmental-pathways model works, the extent to which and parameters within which attachment-related change is possible throughout the course of the lifespan warrants more specific delineation and examination than this chapter could provide. An additional challenge, noted by Shaver and Mikulincer (2004) in a commentary on attachment in the later years, is that attachment figures are often part of a kinship network from birth to death but that, increasingly, this network may be altered due to family break-ups and recompositions. In addition, role reversal between older adults and their grown up offspring, particularly in terms of caregiving, further complicates an already challenging research area. Moreover, these authors identified a possible shift of caregiving functions, in conjunction with aging, "from human relationship partners to God, other religious figures, and internalized images of lost partners" (ibid, p.451).

Table 1.1: Antecedents of individual differences in attachment, and later adaptations
(A summary of empirical findings from Attachment research discussed in Weinfield et al, 1999)

HOME OBSERVATIONS	STRANGE SITUATION CLASSIFICATION	SUBSEQUENT RESEARCH FINDINGS
Mothers less sensitive/more interfering; less accessible to infants' bids; averse to physical contact sought by infants; scant expressed emotion while interacting with infants	AVOIDANT	Precocious, false independence; more attention-seeking with adults, e.g. teachers More likely to manifest bullying; hostility; scapegoating behaviour
Mothers more sensitive/expressive e.g., during feeding; Infants less often overtly angry; less noncompliant; cry less often at home	SECURE	Effective dependence & independence; better peer relations; greater ego resilience; greater persistence at task; tendency to increase effort in the face of possible failure Neither victimisers nor victims; more likely to be empathic Greater social competence; better group problem solving skills
Mothers less sensitive/more interfering; less accessible to infants' bids; erratic in responses	RESISTANT/ AMBIVALENT	More dependence on adults; tendency to decrease effort in the face of possible failure More likely to be victimised if paired with avoidants Less forceful and confident; more hesitant in the face of novelty
Frightening/frightened caregiver behaviour; Possible abuse and/or neglect of infant and/or observed other(s)	DISORGANISED /DISORIENTED	May be chronically angry, aggressive

Weinfield et al (1999) observed that specific predictions can be made regarding individual differences in attachment quality and individuals' later developments in terms of both personality and psychopathology, but the authors circumscribed these predictions, pointing out that "attachment should be expected to exert its influence on a child's later adaptation primarily in the context of beliefs about the self and relationships, rather than indiscriminately predicting all things...good and bad" (ibid, p.75). The authors went on to review empirical studies of infant attachment and later adaptation, including studies of their own. This review provided considerable empirical support for core propositions of the individual-differences aspect of attachment theory. However, none of the longitudinal studies cited contained subjects that, at the time when this chapter was produced, were

more than 15 years of age. Table 1.1 summarises antecedents and consequences of individual attachment differences, as discussed by these authors.

Further advances have since been made in longitudinal research, most notably with publication of The Development of the Person (Sroufe et al, 2005), a 30-year longitudinal study of high-risk children followed from birth to parenthood. A partial summary of this work is a featured article in *Attachment & Human Development*, 7, 4 (Sroufe, 2005). Sroufe described how he and his colleagues drew upon Ainsworth's concept of patterns of behaviour, extending this to an "organizational perspective" on development:.

The central feature of behavior is its organization: with other behaviors, with regard to context, and with regard to the salient issues of a particular developmental period. The meaning of a behavior depends on when and in what circumstances it occurs, what other behaviors are occurring concurrently, and what its function is in the ongoing adaptation of the organism. Further, development is best characterized as changes in the behavioral organization, not simply the addition of behaviors. Finally, salient differences, those with significance for subsequent functioning, are best defined in terms of differences in the organization of behavior with regard to the developmental challenges of the particular era (ibid, p.352).

Sroufe et al's (2005) findings are in line with his own and Weinfeld et al's (1999) earlier views. Variations in infant-caregiver attachment were not found to relate well to every outcome, nor, as Sroufe put it, to "...relate inexorably to any outcome whatsoever. They are related to outcomes only probabilistically and only in the context of complex developmental systems and processes" (Sroufe, 2005). Within this wide-ranging longitudinal research project, one investigation concerned what bearing attachment differences might have, at what stage of development, on young adults as they enter employment (Collins & van Delman, in press). This research is of particular relevance, here; findings are highlighted in the concluding chapter of this thesis.

Bretherton and Munholland revisited the IWM construct; they traced its roots and prior or contemporaneous, related conceptual thinking by others than Bowlby; summarised Bowlby's ideas on the subject; and suggested some refinements of their own (Bretherton & Munholland, 1999). Whereas others, including Cassidy (1999), noted that Bowlby's work on attachment was motivated at least in part by his dissatisfaction with mainstream psychoanalytic thinking of the time, these authors cited earlier work of Freud's, in *An Outline of Psychoanalysis* (Freud, 1940/63), that "uncannily prefigures Bowlby's notion about the function of 'internal working models'" (Bretherton & Munholland, 1999, p.90). These authors also traced Bowlby's own conceptualisation to the work of Kenneth Craik, a pioneer in what has since become recognised as the field of artificial intelligence:

Taking an evolutionary perspective, Craik (1943) proposed that organisms capable of forming complex 'internal working models' of their environment considerably improve their chances of survival, because the ability to construct and use mental models to evaluate the potential consequences of alternative courses of action makes for much more flexible and adaptive behavior...Bowlby favored Craik's metaphor of 'internal working model' over related terms with more static connotations, such as 'image' or 'map,' because both 'working' and 'model' suggested representations upon which an individual can mentally operate in order to generate predictions (Bretherton & Munholland, 1999, p.91).

Bretherton and Munholland observed that Bowlby's conception of the internal working model is very general, applied to all representations, not solely to models of self and other in attachment relationships. However, they acknowledged that it is with respect to representation of self and other in attachment relationships where Bowlby elaborated his ideas about the building, use and revision of mental models (Bretherton & Munholland, 1999, p.91). The authors noted the complementary nature of the developing working models of self and the attachment figure(s) in Bowlby's conceptualisation, and

the need for both members of the dyad to update working models in line with the child's developing physical, social and cognitive competencies in order to avoid the pathogenic potential of ill-fitting mental models. As will be discussed later, attachment researchers have differed in whether they presume or test whether the model of the self and the model of the other are mutually reinforcing (Bartholomew & Horowitz, 1991).

Because Craik was not concerned with this developmental aspect and the attendant need for increasingly sophisticated working models, Bowlby turned to Piaget's ideas about the sensorimotor period (Piaget, 1951, 1952, 1954, cited in Bretherton & Munholland, 1999, p.92).

Bowlby saw infants' sensorimotor understandings of relationships as developing in the context of repeated interactions with caregiving figures. Such embryonic forms of self-other representation, Bowlby argued, enable even very young infants to recognize the patterning of transactions, and hence to anticipate what the caregiver is likely to do next. As infants' developing recall memory allows them to understand that objects (including parents) continue to exist when out of sight, working models slowly become more deliberately 'operable.' Infants can now begin to use working models to make and evaluate simple attachment plans, such as where to search for an attachment figure (ibid).

A child's increasing ability to communicate attachment needs through language, and to make predictions concerning whether and how the attachment figure may respond to comfort seeking, along with his or her growing understanding that the attachment figure's goals and motives can differ from the child's own, precipitates a period of dramatic change that, as previously noted, Bowlby termed 'goal-corrected partnership' (Marvin & Britner, 1999, p.61). Wellman (1990) has been cited for an extensive review of child development research that supports this element of Bowlby's theory, including its relatively early timing (Bretherton & Munholland, 1999, p.92).

Bowlby again borrowed from Piaget in attributing an element of resistance to change of internal working models to the process of assimilation.

...Representations of prior transactions bias what individuals expect, and, within limits, regulate the perception of upcoming experiences with attachment figures. Therefore, an attachment figure's occasional lapses in sensitivity are not likely to undermine a child's confidence in the figure's emotional availability... Ways of acting and thinking that were at one time under deliberate control tend to become less conscious or inaccessible to consciousness as they become habitual and automatic. Automatic processing... makes fewer demands on attention, but the resulting efficiency comes at the price of some loss in flexibility. Finally, the fact that two individuals' working models and expectations are involved in attachment interactions also engenders some stability... These normal stabilizing processes usually give way, however, once a child (or adult) becomes conscious that the old model no longer works (Bretherton & Munholland, 1999, p.92).

The authors considered Bowlby's discussion of the role of defensive processes in the building of internal working models both as it reveals his psychoanalytic background and as he analogised from the information-processing literature. This literature asserts that humans selectively exclude available but irrelevant information in order to focus their limited processing capabilities more effectively on the salient task. "Defensive exclusion, Bowlby argued, may rely on similar processes, but with the goal of warding off perceptions, feelings, and thoughts that would otherwise cause unbearable anxiety and psychological suffering" (ibid, p.93). In Bowlby's view, both the degree to which these defensive processes are unconscious and the degree to which exclusion is successful may vary; he speculated that defensive exclusion might be facilitated by the segregation of contradictory information in different memory systems, rendering detection of conflict among representations more difficult (ibid).

The authors also considered Bowlby's examination of the role of communication and intergenerational transmission in the development of internal working models; in particular, they note his focus on miscommunication. "...The family experience of those

who grow up anxious and fearful is found to be characterized not only by uncertainty about parental support but often also by covert yet strongly distorting parental pressures: pressure on the child, for example, to act as caregiver for a parent; *or to adopt, and thereby to confirm, a parent's false models—of self, of child and of their relationship*” (Bowlby 1973, cited in Bretherton & Munholland, 1999, p.94, who added the italics).

In keeping with Bowlby's own multi-disciplinary approach, Bretherton and Munholland devoted considerable attention to investigating others' theoretical work, particularly that of cognitive and social psychological theorists whose work has appeared more recently than or was unknown to Bowlby but is aligned with his own. “Useful notions regarding the function, structure, and development of working models derive from the literature on scripts (Schank & Abelson, 1977) and event schemas (Nelson, 1986)...also from classic symbolic interactionism as propounded by Mead (1934) and ideas put forth by Lewin (1933) and Heider (1958) that led to the creation of attribution theory” (Bretherton and Munholland, *ibid*, p.95). A pertinent quote from Lewin substantially antedates Bowlby's writings:

In such cases the presence or absence of the mother changes the total structure of the psychological environment very essentially, especially the child's feeling of security or insecurity. As a consequence of the close psychological relationship between the mother and the child's own person, the real abilities of the mother, her effectiveness as against the things and persons of the environment, have for the child the functional significance of an extension of his own security and power against the environment. A departure of the mother thus means to the child a weakening of his strength against the environment (Lewin, 1933, pp.620-621, cited in Bretherton & Munholland, 1999, p.97).

The authors suggested that Heider (1958) extended Lewin's (1933) concept of the person in his or her psychological 'life space' to the interpersonal context, such that individuals, when reacting to one another's behaviours, tend to interpret these behaviours

in terms of their impact—how the other's behaviours make one feel, and what each believes the other intends, thinks, perceives, and feels; in other words, individuals construct internal working models.

Adults generally make such inferences with extreme rapidity, relying on the redundant information available in the total situation. This includes not only the other persons' emotional expressions and the situation context, but also knowledge of past interactions (drawing on working models). What distinguishes children's from adults' internal working models, we suggest, is the complexity of the attribution making and meaning making involved...If one takes seriously Bowlby's suggestion that defensive processes run the gamut from conscious suppression to unconscious repression, some of the phenomena Bowlby described make more sense in terms of defensive misattributions than merely in terms of defensive exclusion and diversion. Moreover, the label 'defensive' may be a misnomer for optimistic attributions based on hope. As Bandura (1982) noted, positive self-efficacy beliefs that are not strictly realistic, but are slight overestimations of likely success or mastery, can exert positive influences on coping and self-regulation by influencing how an individual responds to initial difficulties. Attribution theory thus highlights the function of representation (internal working models) as a reality-regulating and reality-creating, not just a reality-reflecting system (Bretherton & Mulholland, 1999, p.98).

Hazan, Nurit Gur-Yaish, and Campa, in their contribution, *What does it mean to be attached?*, to a recently published volume on adult attachment (Rholes & Simpson, eds., 2004), echoed the concern, voiced by others, that a shift is required from the focus on individual differences, which has dominated adult attachment research, to a focus on development of normative models and, indeed, efforts to answer questions such as the one that Hazan et al (2004) here posed. Whilst recognising the logistical difficulties associated with longitudinal research, they frankly acknowledged that in terms of substantive contribution, individual differences research may be approaching its saturation point. However, their focus then narrowed to consideration of adult attachment in the context of romantic partnerships, and they offered the "good news" that documenting attachment formation in this context may not require long-term longitudinal

research, as “conspicuous changes in the way romantic partners relate to one another over the first year or two of a relationship suggest that attachment-related developments take place within a relatively short time span” (ibid, p. 80). The irony of this stance must be noted, albeit not wholly unsympathetically given the pressures on academics to publish (or perish).

In summary, early research applications of Attachment Theory focused on young children and were concerned with the origins of attachment, including the antecedents, early manifestations, and consequences of the development of a specific attachment orientation in relation to a particular, primary caregiver; attendant measurement issues were also of concern. Over time this focus extended to adults, where the predominant research has concerned consequences of individual differences in attachment style in relation to interpersonal relations and mental health (Roles & Simpson, 2004). New directions that have been called for (Cassidy & Shaver, 1999; Main, 1999), predicted (Roles & Simpson, 2004), and in some instances begun include:

- Both theoretical and empirical work on the caregiving and exploratory systems and their interactions with the attachment system;
- Theory and research on the formation of new attachments in adulthood, and on the role(s) of attachment across the adult lifespan;
- Research on the processes connecting attachment orientations to mental and emotional disturbance or well being;
- Theoretical and empirical treatment of the impact of IWM’s on information processing and unconscious thought processes, extending our understanding of the relationships amongst and impact of different, simultaneously internalised working models, and taking into account both explicit (conscious) and implicit (unconscious) content of these models (Collins et al, 2004; Overall, Fletcher, & Friesen, 2003);
- Theoretical and empirical work on attachment change models, of interest both from the perspective of basic research (e.g., Davila & Cobb, 2004; Fraley &

Brumbaugh, 2004) and as such change models may bear on the design and assessment of psychotherapeutic and other forms of change interventions (e.g. Kobak et al, 2004).

Several salient questions emerge from this overview of Attachment Theory; these are presented here and will be considered further in the sections that follow:

- What is the evidence that, as a construct, attachment is life spanning?
- If it is, then once an individual's attachment orientation is established, to what extent and under what circumstances (if at all) does this orientation change? Does attachment orientation become akin to a personality trait? Or do the characteristics of both individuals in any given relationship within which attachment operates remain substantively influential?
- In particular, to what extent and under what circumstances can an *adult's* attachment orientation change?
- Finally, what are the implications within the workplace? Does attachment even matter at work, or is the work environment a context in which, perhaps, the sociable system predominates?

1.3. Attachment Measures

This section considers measures employed in the assessment of attachment. Its aim is to provide an illustrative sampling of different types of measurement in use, with some attention to their relative strengths and limitations. Although what follows is most certainly not an exhaustive list of such procedures and instruments, nor indeed even a detailed description of each one cited, several procedures are closely examined in the light of their particular influence on the field of attachment and/or their relevance for attachment-related organisational research with adults. In addition, generic issues associated with the measurement of attachment are considered.

1.3.1. Infant attachment/observational methods.

The field of attachment has its theoretical roots in Bowlby's ethological theory. However, the classification approach to attachment relationships pioneered by Ainsworth

et al (1978) is widely acknowledged as the field's empirical cornerstone (Solomon & George, 1999; Sroufe et al, 2005). The 'strange situation' is a 36-minute laboratory procedure involving a young toddler, a parent, and a 'stranger' (to the toddler; normally a member of the research team who has been trained in the requirements of this experimenter role). The procedure is designed to capture the balance of the child's attachment behaviour and exploratory behaviour under conditions of increasing, albeit moderate, stress. Solomon and George outlined the episodes comprising the Strange Situation procedure as follows (ibid, p. 291):

Strange Situation Procedure (Source: Solomon & George, 1999)

Episode	Duration	Description
1	1 minute	<i>Parent, infant:</i> Dyad introduced to room.
2	3 minutes	<i>Parent, infant:</i> Infant settles in, explores. Parent assists only if necessary.
3	3 minutes	<i>Parent, infant, stranger:</i> Introduction of a stranger. Stranger plays with infant during final minute.
4	3 minutes	<i>Infant, stranger:</i> Parent leaves infant with stranger. <i>First separation.</i>
5	3 minutes	<i>Parent, infant:</i> Parent returns. Stranger leaves quietly. <i>First reunion.</i>
6	3 minutes	<i>Infant:</i> Parent leaves infant alone in room. <i>Second separation.</i>
7	3 minutes	<i>Infant, stranger:</i> Stranger enters room and stays with infant, interacting as necessary.
8	3 minutes	<i>Parent, infant:</i> Parent returns. Stranger leaves quietly. <i>Second reunion.</i>

The entire procedure is captured on video. The infant's behaviours are then observed and assessed by a trained coder who, from these, classifies the child's attachment relationship into one of, originally, three main groups: a 'secure' group and two 'insecure' groups. Full directions for running the procedure and for classification are presented in Ainsworth et al (1978).

“Attachment security” has been defined as the state of being secure or untroubled about the availability of the attachment figure (Ainsworth et al, *ibid*). The construct itself is not directly observable; rather, for ‘the strange situation’ and other assessment methods used with infants and toddlers, security is inferred through the observation of attachment behaviours—those that increase proximity to or maintain contact with a particular attachment figure. The type of attachment behavior observed depends upon the degree to which the attachment system is activated.

When a young child is alarmed, he or she can be expected to signal clearly for proximity to and contact with the attachment figure (crying, approaching, reaching, clinging). Once these are achieved, and in the absence of further disturbance, the child can be expected to accept some distance from the attachment figure and return to exploration. Attachment behavior under conditions of low activation [a.k.a. ‘secure-base behaviour’]...can be difficult to distinguish from friendly, affiliative behavior and can be...influenced by features of the external environment (e.g. how far the child can wander; how visible the mother is)...(Solomon & George, 1999, p.288).

According to Ainsworth et al (1978), this basic pattern—a shift from exploration to attachment behaviours and back—will appear disturbed or distorted to the extent that the infant perceives the attachment figure to be inaccessible or unresponsive. In other words, all else held constant, deviations from this basic pattern serve as a measure of insecurity in infant-caregiver attachment (Solomon & George, 1999). Brief descriptions of Ainsworth’s original three main classifications and of a fourth, subsequently developed classification (see Main & Solomon, 1986; 1990) appear in the left-hand column of Table 1.2, which follows. Ainsworth et al (1978) also provided guidance for designating subgroups within these classifications, but these have rarely been examined due to the normally small sample sizes used in research deploying the ‘strange situation’ procedure (Solomon & George, 1999).

Table 1.2: Patterns of strange situation behaviour and corresponding classifications

Summarised from Main et al, 1995; Main and Goldwyn, 1984a; 1998a; Ainsworth et al, 1978; Main & Solomon, 1990 (Hesse, 1999, p.399)

STRANGE SITUATION BEHAVIOUR

- A. *Insecure-Avoidant Attachment.* Fails to cry on separation from parent. Actively avoids/ignores parent on reunion. Little or no contact seeking; no distress; no anger. Response to parent appears unemotional. Focuses on toys or environment throughout procedure. Ainsworth et al, 1978.
- B. *Secure Attachment.* Explores room and toys with interest in pre-separation episodes. Shows signs of missing parent during separation, often crying by the second separation. Obvious preference for parent over stranger. Greets parent actively, usually initiating physical contact. Some contact maintaining by second reunion, but then settles and returns to play. Ainsworth et al, 1978.
- C. *Insecure-Resistant/Ambivalent.* May be wary/distressed even prior to separation, with little exploration. Preoccupied with parent throughout procedure, may seem angry or passive. Fails to settle or take comfort in parent on reunion; usually continues to focus on parent and cry. Fails to return to exploration after reunion. Ainsworth et al, 1978.
- D. *Disorganised/ Disoriented.* The infant displays disorganized and/or disoriented behaviours in the parent's presence, suggesting a temporary collapse of behaviour strategy. For example, the infant may freeze with a trance-like expression, hands in air; may rise at parent's entrance, then fall prone and huddled; or may cling while crying hard and leaning away with gaze averted. Infant behaviour otherwise fits A, B, or C category. Main & Solomon, 1990.

AAI CLASSIFICATIONS

- Dismissing of Attachment.* Assigned to transcripts in which the speaker's state of mind indicates an attempt to limit the influence of attachment relationships in thought, feeling, or daily life. Such transcripts often reveal an implicit claim to strength, normality, and/or independence; parents are often presented in positive terms that are either unsupported or contradicted. Potential negative effects of parenting or other untoward experiences are denied or minimized.
- Freely Valuing/Autonomous.* Speaker appears to value attachment relationships and regard attachment-related experiences as influential, but seems relatively objective regarding any particular experience or relationship, and free to explore thoughts and feelings during the interview. If one or both parents are described as loving, sufficient evidence is provided to support this description. If parents are portrayed negatively, these descriptions appear reflective and often forgiving. Speakers often display an ability to examine the evidence afresh, even while being interviewed, and generally evidence a relatively high level of coherence.
- Preoccupied.* Transcript suggests an excessive, confused, unobjective preoccupation with particular attachment relationships or experiences. Discussions of these experiences often appear neither fruitful nor incisive. Descriptions of early relationships may seem vague and uncritical, or else angry, conflicted, and unconvincing analytical.
- Unresolved/Disorganised.* This fourth classification is characterised by marked lapses in the metacognitive monitoring of reasoning or discourse during discussion of loss or trauma. Such lapses may occur in a high-functioning individual and may not be representative of the speaker's overall conversational style. In coding, transcripts assigned to the Unresolved category are also given a best-fitting alternate classification.

A noteworthy aspect of the original 'strange situation' research is the rigour of the efforts made by Ainsworth, first to craft behaviourally anchored rating scales for caregiver qualities—Sensitivity to Signals; Cooperation-Interference; Acceptance-Rejection; and Availability-Unavailability scales—and then, with her colleagues, to validate the classification groups with respect to infant behaviour toward the mother in the home (Weinfield et al, 1999). With the original 'strange situation' sample, the researchers kept detailed narrative records of home visits that took place monthly for each infant's first year of life. Attachment classification proved to be linked to a set of variables that reflected the frequency and quality of infant attachment behaviour in the home (Solomon & George, 1999).

Particularly in the light of its impact on the field of attachment, it should be noted that the original ‘strange situation’ sample was very small. The full sample size used for development of ‘strange situation’ coding procedures was 106 dyads, with just one sub-sample of 23 mother-infant dyads, all from middle-class families, used in the intensive study of home behaviour (Ainsworth et al, 1978). Of course the fact that, with such a small sample, significant between-group differences were found may be regarded as attesting to the strength of these differences. “Mothers of secure infants were high on all four dimensions: sensitivity; acceptance, cooperation, and psychological accessibility; mothers of avoidant infants provided the infants with little positive experience with physical proximity and were rejecting; and mothers of ambivalent infants were inconsistent or unresponsive to infant distress” (Solomon & George, 1999, p.292).

Over the course of the three decades since its first application, the ‘strange situation’ procedure has been widely replicated. The strength of associations between caregiver qualities and infant attachment categories has tended to be somewhat weaker in replications, perhaps due to measurement error and/or alterations in operational definitions—for example, the shift in definition of ‘sensitivity’ away from Ainsworth’s original focus on appraisal and appropriate response to infant’s signals, toward what may have become a more popular operational definition, emphasising warmth and acceptance (DeWolff & van Ijzendoorn, 1997). Nonetheless, within the attachment field the reliability, stability, and predictive validity of Ainsworth’s classification measure are generally regarded as well established in both the US and Western European populations (Solomon & George, 1999).

Validation of the procedure is ongoing and, as researchers have investigated larger samples and high-risk groups, some inconsistencies have emerged. As already noted and presented in Table 1.2, replication research has led to the identification of a fourth classification group, an additional category of insecure attachment. The infants in this group display diverse behaviours thought to indicate that they lack a coherent attachment strategy in relation to their respective caregivers (e.g., Main & Solomon, 1990). Within the attachment field, this emergent fourth classification is widely viewed simply as a refinement to the original classification framework. Comparisons of the distribution of strange situation classifications between non-clinical and clinical dyads have repeatedly shown a higher percentage of disorganised/disoriented infants in clinical samples than in non-clinical ones (e.g., Main & Hesse, 1990).

Repeated assessments applying ‘the strange situation’ procedure over a very short period (i.e., less than a month) have resulted in low stability, most probably reflecting infants’ sensitisation to the separation procedure (Ainsworth et al, 1978). Otherwise, short-term stability of attachment classification in ‘the strange situation’ is generally considered high (from 50% to 96% when laboratory assessments are conducted between 2 and 6 months apart or longer) according to Solomon and George (1999, p. 292). However, Belsky et al (1996) reported less than 50% short-term stability of classifications, with a considerably larger sample than had been used in earlier stability studies (Solomon & George, *ibid*).

Assessments of the ‘strange situation’ attachment classifications against two home-based measures of attachment security—one a category system devised by Ainsworth and another, the Attachment Q-Sort (AQS), an observational methodology

which yields a summary score reflecting the quality of an infant's secure-base behaviour in the home (Vaughn & Waters, 1990)—revealed that all three approaches were broadly consistent (Solomon & George, 1999). However, Ainsworth's two main insecure groups (Avoidant and Resistant/Ambivalent) tend to have been less well discriminated from each other in the home (Ainsworth et al, 1978; Vaughn & Waters, 1990). Moreover, although Vaughn and Waters (*ibid*) found that infants who were secure with their mothers in the 'strange situation' had significantly higher security scores on the AQS when this was completed by observers, and reported this as confirmation of the link between home behaviour and 'strange situation' classification, several studies using the AQS method have failed to find any relationship between AQS security scores and attachment classification (Solomon & George, 1999, p.292). Along with debate on procedural application of the AQS method—in particular, whether mothers or trained observers are the more appropriate sources of secure-base data—some researchers question whether AQS security and attachment classification actually tap the same underlying construct (*ibid*, p.308).

In their overview of the measurement of attachment security in infancy and childhood, Solomon and George (1999) noted a proliferation of new measures, generated in the context of research efforts to validate the original Ainsworth classification measure and to extend measurement of attachment beyond the second year of life. Whilst supportive of these endeavours in principle, the authors noted a troubling trend toward inattentiveness to systematic, thorough construct validation. They pointed out two particular areas of confusion or error, one at the conceptual and the other at the methodological level. The area of conceptual concern they noted was:

a common, implicit assumption in the literature that secure child-mother attachment will in all contexts predict maternal sensitivity, positive affect on the part of the child, and harmonious interaction. In other words, attachment has come to stand for the whole of the multifaceted child-parent relationship [with the result that]...most researchers have given inadequate thought to the contexts in which they have observed parents and children (ibid, p.310).

Whilst this is an important point, and by implication illuminates the attention and precision with which Ainsworth and her colleagues thought through as well as conducting their research, “conceptual slips” such as here noted are evidently easily made. Even in the context of surfacing this one, these authors made reference in one sentence to ‘child-mother’ attachment, and in the next to the ‘child-parent’ relationship. Although some research does compare maternal and paternal attachment relationships, much remains to be done to develop an understanding of the psychometric properties and meaning of attachment measures for infant-father relationships (as well as for relationships with other caregivers, and attachment relationships in non-Western societies); such investigation would also need to take into account alterations that may have occurred in the roles of mothers and fathers in the western world during the three decades since the ‘strange situation’ procedure was first introduced, as these same authors have elsewhere noted (ibid, p.294).

The methodological problem to which Solomon and George drew attention “arises from the accelerated pace of research in attachment, [which] seems to have been accompanied by a kind of frontier mentality regarding the development and use of new measures [that] can be likened to a gold rush [in that] the prospect of discovering empirical ‘gold’ may...blind researchers to important validation issues” (Solomon & George, 1999, p.310). The authors cautioned against five procedures they reported

having discovered in published papers and conference presentations during the course of conducting their review of measures of attachment in infancy and childhood:

(1) using measures developed for one age range...in studies of earlier or later ages without prior, independent validation of the measure for the new period; (2) incorporating one or more procedures, measures, or coding systems into a new measure, and claiming validation for the new measure on the basis of data collected for the original procedures; (3) developing a coding or classification system for a new measure based only on *a priori*, theoretical considerations or only on findings with a theoretically similar measure, without refining these on the basis of empirical findings; (4) referring solely to the opinion of an 'expert' by way of establishing reliability or validity for a new measure; and (5) asserting a new measure to be valid based on similarities in the distribution of classifications that emerge in the new system, compared to the distribution of classifications found with other measures or at other ages (ibid, pp.310-311).

Sroufe et al (2005), in describing the research approach they developed for the Minnesota study of risk and adaptation, noted that in fact Ainsworth

described not one but four patterns of effective (secure) attachment organizations. On the surface, these were quite distinctive. Some infants, for example, become quite distressed during brief separations from the caregiver. Upon reunion, they approach directly, actively seek contact, hug, and cling until settled. Others are not acutely distressed by separation (but perhaps simply subdued) and seek no physical contact upon reunion. Instead, they broadly smile, show toys, and otherwise reengage the caregiver through interaction. What these two distinctive organizations have in common is active initiation of reconnection with the caregiver that, in each case, promotes a subsequent return to active play and exploration. Disturbed organizations, while also varied, in one way or another compromise emotional regulation and exploration (ibid, p.44).

They raised this point to illustrate their research stance, which was to measure organised patterns of adaptation within a developmental context—recognising that there is no single 'correct' pattern of organisation at a given age, but rather a number of variations that work—whilst simultaneously conducting assessments of relevant context factors. Their aim was “to track the changing organization of behavior that resulted from the interplay of a variety of forces at different levels of context acting over time” (ibid, p.45).

Although they developed many bespoke measures for this purpose, clearly their research is an exception to the “gold rush” phenomenon noted above.

1.3.2. Adolescent and adult attachment/cognitive-linguistic methods.

According to the theory, attachment as a phenomenon endures throughout the lifespan. However, whereas infant attachment behaviours have been shown to be easily provoked and readily observed, the attachment behavioural system is not so easy to assess in adult relationships.

For example, how does one operationalize secure base behavior? What does it look like in the every day life of adult partners? The reciprocal nature of the relationships complicates the picture. (Crowell & Treboux, 1995).

Whereas prior to 1980 the topic area of adult attachment virtually did not exist, over the past 25 years or so there has been an increasing amount of published research on attachment in adolescence and adulthood. Crowell et al (1999) reported that, between 1987 and 1997, some 800 articles and chapters were published within this strand of the attachment field. Some of this research has taken the form of longitudinal studies that seek to provide evidence of psycho/sociological and performance outcomes that may be predicted from early attachment orientation; some has entailed investigation into the extent of and reasons for continuity or change in attachment orientation. Particularly for the latter thrust, researchers are faced with the challenge (already extant even in attachment research beyond infancy) of how to assess a phenomenon—attachment security—that cannot be directly observed, and for which indicators deemed appropriate at one stage of development are not fit for purpose for a later stage.

Emergence of the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1984; 1985; 1996) is widely regarded as a major turning point in the attachment field

(Hesse, 1999). The AAI protocol was developed in the early 1980's along with a companion system for scoring and classification (Main & Goldwyn, 1998). Initial analysis revealed that several continuous rating scales, designed to capture a parent's current state of mind with respect to his/her own childhood attachment experiences, appeared substantially related to aspects of the infant's behaviour toward that parent during conduct of 'the strange situation' procedure 5 years previously.

For example, scores for an infant's avoidance of the mother during the reunion episodes of the strange situation were correlated with her insistence upon lack of memory for childhood within the AAI, and with her idealization of her own mother...A strong relation was uncovered between the four categories of parental AAI response...and the infant's strange situation response to the parent...(Hesse, 1999, p.396).

The protocol is a semi-structured interview, usually described as taking an hour to administer, although in fact it frequently takes longer. The interview is tape-recorded and transcribed verbatim, with any cues to intonation or nonverbal behaviour omitted. After requesting a general description of childhood, with a focus on relationships to parents, the interviewer asks for five adjectives that describe the relationship with each parent in turn, and then with any other childhood attachment figure. Following the provision of each set of adjectives, the respondent is probed for specific memories that illustrate each chosen descriptor. The respondent is then queried about incidents of emotional upset, physical injury, and illness during childhood, with a dual focus on memories of the respondent's behaviour and of parental response on these occasions. The respondent is asked to recall separation experiences, and is asked about possible experiences of rejection, disciplinary threats, and abuse. The respondent is then invited to reflect upon the effects of these experiences on his/her adult personality, in particular on any resultant setback to

development, and to reflect upon why the parents (or other attachment figures) behaved as they did (Hesse, 1999).

The central task for the respondent is to generate and reflect upon attachment-related memories whilst simultaneously maintaining consistent, collaborative, coherent discourse with the interviewer (Hesse, *ibid*). A valued characteristic of the protocol is its capacity to ‘surprise the unconscious’ (George et al, 1996) and in doing so reveal inconsistencies that in turn indicate attachment insecurity. Analysis of the AAI transcript is quite sophisticated and certification requires substantial training and a rigorous demonstration of reliability; a detailed description of the analysis system and an outline of certification procedures may be found in Cassidy and Shaver, Eds. (1999). Whilst this description remains generally accurate, efforts to refine the protocol, transcript analysis, and training are all ongoing; Mary Main, who first developed the AAI in conjunction with her doctorate, and who oversees training and certification of AAI coders, shows every sign of being as conscientious and attentive to detail in her work as was her doctoral advisor, Mary Ainsworth. An AAI training institute held at UCL in the summer of 2002 utilised Main’s *Adult Attachment Scoring and Classification Systems Manual in Draft: Version 6.3*. At that time a new draft was in progress, and Institute trainees were invited to submit comments and suggestions for revision to the author, via the training team. At this writing, the manual continues to be refined, and remains unpublished.

Brief descriptions of the AAI classification categories appear earlier in this review, in the right-hand column of Table 1.2. As with ‘the strange situation,’ AAI subcategories have also been devised, but most published research reports at the level of main classifications, and training for coder certification assesses reliability only at this

broader level. Replication research is ongoing, and continues to reveal a strong relationship between parental AAI response and infant's 'strange situation' response to that parent (Hesse, 1999).

In the current system of AAI analysis...speakers are judged 'secure/autonomous' when they produce an acceptably coherent and collaborative narrative, whether experiences are reported as having been favorable or unfavorable. In essence, these speakers appear to answer questions with sufficient (but not excessive) elaboration, and then return the conversational turn to the interviewer...The children of [these] coherent speakers are consistently classified as secure [in 'the strange situation' procedure.]...Interviews are classified as 'dismissing' when discourse appears aimed at minimizing the discussion of attachment-related experiences...Speakers falling into this category have repeatedly been found to have children classified as avoidant...Individuals classified as 'preoccupied,' while not necessarily internally inconsistent...maximize attention to attachment-related experiences and their effects at the expense of retaining appropriate conversational collaboration...[and] may also digress to remote topics, use vague language, and on occasion oscillate regarding their view of a parent several times within the same sentence. Infants of these speakers are typically judged resistant/ambivalent...Finally, among 'unresolved' speakers, disorganization in discourse and reasoning appears to indicate disruptions in attentional processes, whether otherwise flexible or inflexible. Here it has been suggested that a (temporary) collapse in attention is occasioned by the arousal of unintegrated fear. Strikingly, the infants of these speakers manifest disruptions (disorganization/disorientation) in attention and behavior during the strange situation (Hesse, 1999, pp.397-8; p.427).

In sum, the AAI enables an adult's representational processes—deemed the likely mediator of differences in parental caregiving behaviour—to be accessible to investigation, and likewise enables classification of the adult's current attachment orientation without reliance on either observation (as with 'the strange situation') or self-report (as discussed later in this review). "No claim is made that the contents of any given interview represent an accurate reconstruction of experience—or, more specifically, that coherence of interview response and accuracy in recounting of early experience are related" (Hesse, 1999, p.423). Rather, the approach for the AAI's scoring and classification system entails quantifying distinctions in narrative form in ways that take

the conversational interaction process between interviewer and respondent into consideration. Subsequent to its development, this approach was found to fit well with the work of linguistic philosopher Grice (1975, 1989) in terms of his articulated principles of cooperative, rational discourse (Hesse, 1999).

According to proponents of the AAI, an important distinction between the AAI and many other methods of assessing attachment security is that, whereas other measures tend to entail assessing the organisation of the individual's attachment to one specified other (as in, for example, an infant-mother dyad), the AAI assesses an individual's overall 'state of mind with respect to attachment' (Main, 1999, p.859). In other words, adults assessed via the AAI are not found to be securely or insecurely attached, *per se*, since that would apply attachment *to* someone; designations such as 'autonomous' and 'freely valuing' (per Table 1.2) in lieu of 'secure' have been introduced into the literature in an effort to make this distinction clear. The AAI's ability to differentiate amongst individuals' overall states of mind with regard to attachment itself serves as evidence in support of two important aspects of the theory—that the attachment construct is life spanning, and that, over time, attachment experiences become internalised as cognitive schemata, or 'internal working models' (Bowlby, 1969/82).

A growing number of replication studies demonstrate the capacity of the AAI to predict an infant's strange situation response to that adult. These now include studies designed to assess the possible confound of the offspring upon the parent's state of mind. In one such study, AAIs were administered to 96 London mothers before childbirth, and judges unaware of the mothers' AAI classifications conducted strange situation assessments at 12 months; the overall two-way (secure-insecure) match between mothers'

prenatal interviews and children's security of attachment was 75%; the three-way match was 66% (Fonagy, Steele, & Steele, 1991). The secure-insecure match between father's pre-birth interviews and infants' strange situation response to fathers was 71% (Steele, Steele, & Fonagy, 1996). Other pre-birth studies have shown similar results (Hesse, 1999, p.407).

Research on the psychometric properties of the AAI has revealed a classification distribution pattern that, in non-clinical samples, is similar to the main classification distribution in 'strange situation' samples, and is similar between mothers and fathers (Hesse, *ibid*). Campos et al (1983) estimated the distribution of classifications in infancy as 23% avoidant, 62% secure, and 15% resistant (cited in Hazan & Shaver, 1987). Two subsequent meta-analyses of non-clinical infant-mother dyads in 'the strange situation,' one with Western European samples and the other with U.S. samples, found the distribution of 'strange situation' attachment classifications to be, respectively: 28% avoidant, 66% secure, and 6% resistant; 21% avoidant, 67% secure, and 12% resistant (van IJzendoorn & Sagi, 1999). Similarly, in a three-way meta-analysis of 584 non-clinical mothers' AAIs, 24% were classified dismissing, 58% secure/autonomous, and 18% preoccupied; the distribution among non-clinical fathers was found to be highly similar (van IJzendoorn and Bakermans-Kranenburg, 1996).

Van IJzendoorn and Bakermans-Kranenburg (1996) provided descriptions of studies of the AAI's internal and test-retest reliability, including through use of different (trained) interviewers and of the same vs. different coders than interviewers; they also described studies of the AAI's stability, most of which, however, were conducted over periods of 3 months or less, although "Benoit and Parker (1994) showed that 90% of their

sample of 84 Canadian mothers received the same AAI classification across a 1.5-year period” (van IJzendoorn & Bakermans-Kranenburg, 1996, p.9). These authors also reported on studies that they concluded showed that the AAI “appears to meet stringent psychometric criteria, not only in terms of reliability but also in terms of discriminant and predictive validity” (ibid). Hesse (1999), likewise, reported that rigorous research had been conducted on the AAI’s stability and discriminant validity, noting that short-term stability studies typically employ different interviewers across the time period in question (ibid, p.409). However, neither van IJzendoorn & Bakermans-Kranenburg (1996) nor Hesse (1999) gave any indication that respondent’s familiarity with the protocol at re-interview was a concern. This is puzzling given the AAI’s valued quality of the element of surprise, e.g., as described by Hesse (1999) and noted above.

In at least one discriminant validity study of the AAI, the Preoccupied group had significantly lower IQ scores than the other groups (Crowell, Waters, Treboux, O’Connor, Colon-Downs, Feider, Golby, & Posada, 1996). Although the overall sample in this study was small (N=53; N=50) and the Preoccupied group therefore very small indeed, and although Hesse (1999) referenced five other studies in which secure versus insecure attachment was not found to be related to intelligence, Crowell et al reported several studies in which AAI discourse coherency was found to be related to educational level and to ego development, the latter of which, as they pointed out, is a construct known to correlate significantly with intelligence (Crowell et al, 1996, p.2585). The authors’ findings also contrast with the published findings of two other discriminant validity studies of which they were aware (one of which was authored by van IJzendoorn with a colleague), however, direct comparison of these studies was “difficult because of

differences across samples in assessments of intelligence, in reporting of essential information which would facilitate comparisons...such as the variability of scores, means, and standard deviations, and...in the analyses selected” (Crowell et al, *ibid*, p. 2595). Moreover, as these authors also point out, the other two studies involved non-English-speaking samples *ibid*). The authors recommended simply that IQ be included as a covariate in research with the AAI until this issue was resolved; it is unclear, from Hesse’s (1999) coverage, whether in the interim period this issue was indeed resolved on the basis of further research or whether, rather, his write up was a substitute strategy for “resolving” it.

As Hesse (1999) pointed out, initial use of the AAI tends to have focused on its implied ability to predict caregiving behaviour by predicting the infant’s ‘strange situation’ response; such use does not assist in tracing an individual’s own attachment history, nor in identifying pathways that involve change in attachment orientation. Subsequently, longitudinal studies have been conducted in which the same individuals were assessed, firstly, using ‘the strange situation’ procedure, and then, 15-20 years later, using the AAI (e.g., Waters et al, 1995). Taken together, these studies give credence to the notion that the attachment orientation established [towards mother] at an early age tends to be maintained at least in early adulthood, except through ‘lawful discontinuity’ such as might result from highly stressful intervening life events (Hesse, 1999, pp.414-5, p.426). These studies support, at least in part, the theoretical stance that attachment is a life-spanning construct. That said, such research does not in and of itself shed light on what the function of attachment might be, post-infancy.

Alternative methods of scoring the AAI include a Q-sort assessment (Kobak, 1993) and a scale for “reflective self function” (Fonagy, Steele, Steele, Moran, & Higgitt, 1991). The first entails two or more coders rating the transcript using 100 Q-sort items and instructions that impose a forced normal distribution along a 9-point continuum. These are then correlated with expert-based prototypic sorts for two dimensions (secure vs. anxious and dismissing vs. preoccupied). This underlying structure is aligned with that of both the strange situation and the Main and Goldwyn scoring system for the AAI, but emphasises the relation between affect regulation and attachment representations by examining the use of secure versus insecure emotional strategies and ‘deactivating’ versus ‘hyperactivating’ strategies, where the former corresponds to dismissing and the latter to preoccupied behaviour patterns (Crowell et al, 1999). The reflective self function scale (Fonagy et al, 1991) may be viewed as corresponding to Main’s scale for meta-cognitive monitoring of errors on the AAI speaker’s own present or past thinking; however, its particular focus is on the adult’s quality of understanding the intentions and motivations of both self and others. In a study of 200 parents, the self-reflective function was a stronger predictor than AAI coherence of infant security (ibid; Hesse, 1999).

1.3.3. Other interview measures of adult attachment.

Although the AAI is regarded by proponents as in a class of its own, other interview measures of adult attachment have also been developed. For example, the Peer and Romantic Attachment Interviews are based on a four category model of attachment that treats models of ‘self’ and ‘other’ as independent (Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994). (This model is considered in more detail later in this section, with the treatment of self-report questionnaires.) In one review of adult

attachment measures, the Peer Interview was reported to have been found to be moderately stable. Gender differences were reported to have been found, with women more likely to be rated preoccupied, and men more likely to be rated dismissing (Crowell & Treboux, 1995). Another attachment interview, the Current Relationship Interview (CRI; Crowell, 1990), investigates the attachment representation with the adult romantic partnership by examining descriptions of the attachment behaviour of the self and partner using a format modeled on the AAI, and a scoring system intended to parallel the AAI scoring system scales (Owens & Crowell, 1992). In one review of this measure, a significant relationship was reported to have been found between intelligence scores and security (Crowell & Treboux, *ibid*), but security on the CRI was elsewhere reported to be unrelated to intelligence, education, gender, or duration of relationship (Crowell, Fraley, & Shaver, 1999). Moderate stability of classifications has been found (Crowell & Treboux, *ibid*); “unlike the AAI, the CRI draws upon a current relationship, subject to life events and the partner’s behaviors. Hence the CRI classifications are expected to be less stable than those of the AAI, especially in the early phases of relationship development” (Crowell et al, 1999). Nonetheless, Sroufe et al (2005), in their 30-year longitudinal study, reported having first used the AAI when participants were age 19 and the CRI when those in romantic relationships were age 20. In this set of applications, the CRI proved more strongly related than the AAI to secure attachment experience assessed in infancy. Fully 55% of their participants, and moreover the majority of those who as infants had been found to be secure, were categorised as ‘Dismissing’ on the AAI. In contrast, CRI results were significantly related to early attachment history (Sroufe et al, 2005). Elsewhere, Hesse has noted that the AAI distributions in adolescent samples,

when combined with very low socio-economic status backgrounds (as would have been the case for the Sroufe et al sample), differed significantly from non-clinical mother samples, with the unresolved and dismissing categories being overrepresented, and the secure/autonomous category comparably underrepresented (Hesse, 1999, p.409).

1.3.4. Q-Sort assessments.

In addition to the Adult Attachment Q-sort mentioned earlier (Kobak, 1993), Kobak and Hazan (1991) created a Marital Q-sort that assesses two dimensions of attachment within the current relationship: reliance on partner and psychological availability. The reliance scale assesses use of the partner as a secure base/safe haven; availability assesses being a secure base/safe haven to a partner (ibid).

1.3.5. Self-report questionnaires.

Whilst within the attachment field 'the strange situation' procedure and the AAI are both widely regarded as highly credible assessment tools, they are also both recognised as costly in terms of time and expense of administration, and training requirements. As a means of more readily and less expensively assessing adult attachment, many researchers have substituted self-report measures of attachment. Qualitative and quantitative self-report instruments have both been utilised in attachment research.

In the first instance, Hazan and Shaver (1987), in their groundbreaking conceptualisation of romantic love as an attachment process, developed a single description of each of three hypothesised romantic attachment categories, based on the three main 'strange situation' classifications: secure, avoidant, and anxious/ambivalent. Research participants were invited to select, from the three (unlabelled) descriptions, the

one that best characterised themselves. In making their selection, study participants classified themselves in terms of romantic attachment category. An early, relatively minor revision of this measure entailed retaining the three categorical descriptions and presenting them to research participants intact, but in lieu of requiring a forced choice amongst the three, participants were asked to complete rating scales indicating the extent to which each description applied (Levy & Davis, 1988, cited in Feeney, 1999). This modification of Hazan and Shaver's (1987) procedure enabled researchers to compare score patterns across attachment styles, and to identify differences in these that might bear on individual and relationship outcomes. However, the revised procedure retained an untested assumption that each of the individual attachment descriptions formed a consistent whole (Feeney, 1999).

In follow-on research intended to extend the researchers' understanding of romantic attachment, Collins and Read (1990) further modified the Hazan and Shaver (1987) measure by converting it into a questionnaire incorporating a Likert scale (ranging from *not at all characteristic* to *very characteristic*), the Adult Attachment Scale (AAS). According to Collins and Read (ibid), the earlier romantic attachment measurement tool upon which they were building had several limitations. Firstly, it required respondents to choose an entire attachment description, although any one description might not in fact reflect their feelings on all dimensions; secondly, choice amongst the three descriptions did not enable assessment of the degree to which whatever attachment description was chosen was perceived as characterising the individual; finally, the qualitative measure assumed three mutually exclusive styles, precluding examination of possible relations

amongst styles, or indeed of whether three styles are the most valid description of romantic attachment (ibid, p.646).

Collins and Read (1990) initially produced a 21-item romantic attachment scale based on Hazan and Shaver's (1987) romantic attachment descriptions, supplemented by

two important aspects of attachment not included in Hazan and Shaver's (1987) measure. The first concerns beliefs about whether the attachment figure will be available and responsive when needed, which is a primary dimension thought to underlie differences in attachment style. Therefore we developed three statements, each characterizing one of the styles with respect to confidence in the availability and dependability of others. The second aspect concerns reactions to separation from the caretaker, which is an important criterion for categorizing infants into styles. We developed three items, each characterizing one of the attachment styles with respect to separation and phrased in terms appropriate for adult relationships (Collins and Read, ibid, p.646).

Factor analysis of responses to this initial questionnaire revealed that, after oblique rotation, the three items concerning responses to separation loaded on a single factor that had an eigenvalue of less than 1, and did not account for substantial variance. When fewer factors were rotated, the three items loaded on more than one factor; they were therefore deleted from further analysis (and from subsequent use of the questionnaire), leaving the AAS as an 18-item questionnaire (ibid).

It is not altogether surprising that the added items on response to separation failed to prove useful. The attachment literature is clear that, as the child develops, and particularly with the emergence of language skills, literal physical separation from the attachment figure diminishes as a trigger of attachment behaviour, since fear arising from such separations can be mediated through internal working models and 'goal-corrected partnership' (Bowlby, 1969/82). Table 1.3 displays Hazan and Shaver's (1987) romantic attachment descriptions and Collins and Read's (1990) finalised AAS.

Table 1.3: Romantic attachment style measures

Source: JPSP 1990, Vol.58, No.4, pp. 646-7

HAZAN & SHAVER'S (1987) DESCRIPTIONS	COLLINS & READ'S (1990) AAS QUESTIONNAIRE
1. <i>Secure</i> —I find it relatively easy to get close to others and am comfortable depending on them and having them depend on me. I don't often worry about being abandoned or about someone getting too close to me.	I find it difficult to allow myself to depend on others. (Av) People are never there when you need them. (Av) I am comfortable depending on others. (S) I know that others will be there when I need them. (S) I find it difficult to trust others completely. (Av) I am not sure that I can always depend on others to be there when I need them. (Ax)
2. <i>Avoidant</i> —I am somewhat uncomfortable being close to others, I find it difficult to trust them, difficult to allow myself to depend on them. I am nervous when anyone gets too close, and often, love partners want me to be more intimate than I feel comfortable being.	I do not often worry about being abandoned. (S) I often worry that my partner does not really love me. (Ax) I find others are reluctant to get as close as I would like. (Ax) I often worry my partner will not want to stay with me. (Ax) I want to merge completely with another person. (Ax) My desire to merge sometimes scares people away. (Ax)
3. <i>Anxious/Ambivalent</i> —I find that others are reluctant to get as close as I would like. I often worry that my partner doesn't really love me or won't want to stay with me. I want to merge completely with another person, and this desire sometimes scares people away.	I find it relatively easy to get close to others. (S) I do not often worry about someone getting too close to me. (S) I am somewhat uncomfortable being close to others. (Av) I am nervous when anyone gets too close. (Av) I am comfortable having others depend on me. (S) Often, love partners want me to be more intimate than I feel comfortable being. (Av)

As with the proliferation of infancy and child attachment measures noted earlier in this review, researchers in the arena of adult interpersonal attachment have generated an array of new measures of what has come to be called 'attachment orientations,' 'attachment styles,' or 'attachment patterns' (Crowell et al, 1999). Many of these measures are continuous Likert scales similar to that of Collins and Read (1990), thus permitting factor-analytic investigation of their underlying structure. However, because researchers have divided up the descriptions in different ways, and in some cases have added or omitted questionnaire items, item content has tended to vary across studies. This in turn has slowed the process of determining or at any rate agreeing upon one underlying structure for such measures.

Bartholomew (1990) drew upon Bowlby's concept of internal working models of self and attachment figure as the basis for her approach to conceptualising attachment:

Confidence that an attachment figure is...likely to be responsive can be seen to turn on two variables: (a) whether or not the attachment figure is judged to be the sort of person who in general responds to calls for support and protection; (b) whether or not the self is judged to be the sort of person towards whom...the attachment figure is likely to respond in a helpful way. Logically these variables are independent. In practice, they are apt to be confounded. As a result, the model of the attachment figure and the model of the self are likely to develop so as to be complementary and mutually confirming (Bowlby, 1973, p.234).

Specifically, Bartholomew (1990) proposed that two dimensions underlying measures of adult romantic attachment could be conceptualised as 'model of self' (positive vs. negative) and 'model of other' (positive vs. negative), yielding four rather than three major attachment patterns. She drew on a mixture of the Ainsworth, Hazan and Shaver, and Main et al typologies in naming the four resultant patterns, as shown hereafter:

Conceptual Models:	Other—Positive	Other—Negative
Self—Positive	<i>Secure</i>	<i>Dismissing</i>
Self—Negative	<i>Preoccupied</i>	<i>Fearful</i>

With colleagues, Bartholomew subsequently developed two questionnaires. The first, the Relationship Questionnaire (RQ) is similar to Hazan and Shaver's (1987) simple, descriptive categories measure (displayed in Table 1.3), but with four categories rather than three (Bartholomew and Horowitz, 1991). Indeed, three of the four descriptions are very similar in wording to the earlier measure's descriptions; however, the description for the 'dismissing' category conveys compulsive self-reliance and independence:

“I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me” (Bartholomew and Horowitz, *ibid*, cited in Crowell et al, *ibid*, p.451).

The second and more sophisticated questionnaire, the Relationship Styles Questionnaire (RSQ), can be scaled to create a score for each individual on each of the four attachment patterns, and also can be scaled to score individuals on the two underlying dimensions (Griffin and Bartholomew, 1994).

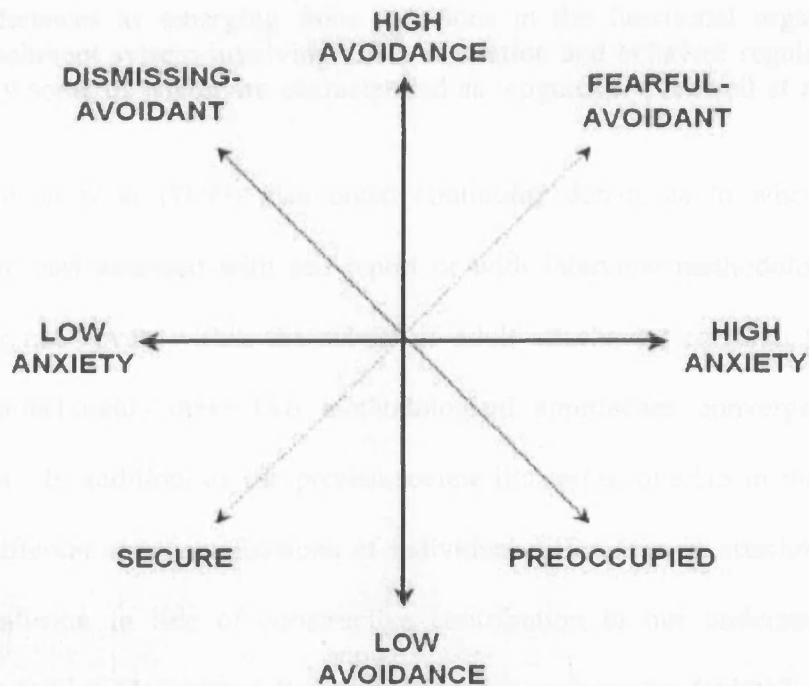
In a recent study investigating the organisation and predictive power of general and relationship-specific attachment representations, Klohnen, Weller, Luo and Choe (2005) include the RQ among their attachment measures, along with the first author's recently designed Circumplex Measure of Attachment-Based Self-Representations (CMABS). As already described, the former assesses individuals' specific behaviours and feelings within relationships; the latter is designed to measure more generalised aspects of individuals' self-concept that are systematically associated with individual differences in attachment organisation (*ibid*). These authors note that the RQ has been found to have low reliability (e.g, Baldwin & Fehr, 1995, cited in Klohnen et al, 2005), but they nonetheless include it, presumably because of its ease of application and widespread use across other attachment research of this type. An alternative view is that the RQ, more than measures of personality, is susceptible to contextual fluctuations (Zhang & Labouvie-Vief, 2004). Yet another view is that the RQ may tap into a more global model of attachment than, for example, Fraley, Waller, and Brennan's (2000) Revised Experiences in Close Relationships (ECR-R) self-report measure of romantic attachment (Sibley et al, 2005). Moreover, the RQ has elsewhere been found to be the

only measure among popular measures of attachment to demonstrate independence from self-deceptive biases (Besser & Priel, 2006).

Amongst social and personality psychologists who employ self-report attachment measures, there is increasing consensus that there are two major underlying dimensions to these types of measures (Feeney, 1999; Shaver & Fraley, online paper; Shaver & Mikulincer, 2004). Brennan, Clark, & Shaver (1998) reviewed 14 such attachment measures and identified two underlying dimensions, which they observed correspond to the two dimensions underlying Ainsworth's infant typology (see Fig. 10, Ainsworth et al, 1978).

In a discriminant analysis involving 105 infants who had been categorized and scored by coders on Ainsworth's infant behavior scales (e.g., crying, contact maintenance, exploratory behavior, resistance, avoidance) two linear combinations of coding scales were created that discriminated well among the three infant categories. One function distinguished ambivalent (angry, tearful) from secure and avoidant infants, thereby reflecting variability in ambivalent attachment. The other distinguished avoidant from secure and ambivalent infants, thereby reflecting avoidance (Crowell et al, 1999, p.450).

Brennan et al (1998) characterised these two dimensions as 'anxiety' (about abandonment or insufficient love) and 'avoidance' (of intimacy and emotional expression); factor analysis of their own continuous measure of attachment revealed these same two dimensions. Feeney similarly characterised these dimensions as "anxiety over relationships" and "comfort with closeness" (Feeney, 1999, p.361). Fraley and Waller (1998) concluded that there is no evidence for a true attachment typology; attachment styles are, rather, regions in a two-dimensional space. Shaver and Fraley (online paper) likewise advocated use of continuous scales as more precise than categorical measures, and offered a visual depiction of different formulations of the two underlying dimensions:



The two-dimensional model of individual differences in adult attachment (Shaver & Fraley, online paper)

Crowell et al (1999) identified two particular issues as regards the measurement of adult attachment with self-reports:

The first concerns whether adult attachment patterns are best conceptualized and measured as types or dimensions... Fraley & Waller (1998) review many of the problems that can arise when categorical models are used to assess dimensional phenomena, and they recommend that researchers adopt dimensional measurement models to study adult attachment...

A second issue concerns how best to conceptualize the two dimensions that underlie adult attachment. Specifically, it is unclear whether measurement should be focused on assessing variation in the content of working models or variation in the functional operation of the attachment system. Within Bartholomew's framework, individual differences in attachment are conceptualized as being due to differences in the beliefs people hold about themselves and others. Accordingly, many researchers have attempted to specify the actual beliefs that people with different attachment orientations hold...When Hazan and Shaver originally

applied attachment theory to adults, however, they conceptualized individual differences as emerging from variations in the functional organization of the attachment system involving affect regulation and behavior regulation processes, only some of which are characterized as ‘cognitive’ (Crowell et al, *ibid*, pp.452-3).

Crowell et al (1999) also noted continuing debate as to whether attachment patterns are best assessed with self-report or with interview methodologies, and as to whether or not—even within the subset of adult attachment research that focuses on romantic attachment—these two methodological approaches converge on the same phenomena. In addition, as the present review illustrates, overlap in the terms used to describe different conceptualisations of individual differences in attachment orientation invites confusion in lieu of constructive contribution to our understanding of adult attachment (which Shaver and Fraley attempted to redress, as depicted on the previous page).

1.3.6. Self-report and state of mind

Some researchers have endeavoured to design self-report instruments that would capture ‘state of mind with respect to attachment’ as per the AAI; proponents of the AAI report that virtually all such research has found self-reported quality of attachment to parents unrelated to AAI results (Hesse, 1999). Some measures of romantic attachment have produced coherent results (Crowell et al, 1999), but whether and how these might relate to attachment as assessed by either ‘the strange situation’ or the AAI remains an open question. A few studies have endeavoured to investigate the relatedness of the ‘state of mind’ and ‘romantic’ attachment constructs, but these studies have tended to be presented at conferences rather than published, so assessment of their methods and findings has been difficult (Shaver et al, 2000). One published study did find associations

between aspects of the AAI (George et al, 1985) and Collins and Read's (1990) continuous self-report measure of romantic attachment described above (Shaver et al, 2000). These findings influenced the choice of attachment measure for the organisational research presented in the research chapters that follow this review.

It seems clear that 'the strange situation' effectively captures observational data that reveal the attachment orientation of an infant towards one adult in particular—the adult in the dyad being observed. Likewise, there is mounting evidence that the AAI provides data revealing an adult's overall 'state of mind' in relation to attachment. Longitudinal studies of subjects that have been assessed using one or both of these instruments tend to predict and then find associated, discrepant patterns of behaviour and attitude that, taken together, reinforce the notion that attachment orientation takes hold in a trait-like fashion. And yet we know, from comparative applications of 'the strange situation' substituting different attachment figures, that a given infant's strange situation behaviour may differ from one attachment relationship to another. One appealing aspect of continuous self-report questionnaires is that the design of such assessment tools allows for the possibility that more than one attachment style might be in operation, or at least held in mind.

Shaver and Mikulincer (2004) acknowledged and differentiated between two somewhat independent lines of emerging adult attachment research. One of these primarily utilises the AAI, and is concerned with issues of interest to developmental and clinical psychologists, such as aspects of the cross-generational transmission of attachment orientation and, as is elsewhere noted (Kobak, Cassidy, & Ziv, 2004), the impact of trauma and loss. The other line of research, of interest primarily to personality

and social psychologists, including Shaver and Mikulincer themselves, was spearheaded using Hazan and Shaver's (1987) short self-report measure of adult attachment 'style' and now employs the sorts of self-report measures that are discussed in the present review (Shaver & Mikulincer, 2004). The authors examined the reasons for these lines of research remaining separate. They acknowledged the different research questions motivating investigators in these two areas, but challenged the argument that two different domains are being measured. The authors cited research (Crowell, Treboux, & Waters, 1999; Simpson et al, 2002; Waters et al, 2002) in which self-reports of attachment anxiety and avoidance were not found to be significantly associated with AAI classifications, but also cited other studies where significant associations were found. "For example, Shaver and colleagues (2000) found that self-report attachment scores could be predicted from AAI coding scales with multiple R's of .48 and .52" (ibid, p.19). Shaver and Mikulincer (2004) tackled what they characterised as the supposition of AAI researchers that self-report measures cannot access adults' relevant unconscious processes, and argued that when used in conjunction with other kinds of measures, such as implicit priming techniques and the measurement of physiological correlates, self-report measures of attachment "can reveal a great deal about implicit, unconscious processes" (ibid); the authors proceeded to cite and describe a number of studies in support of their stance.

Of particular interest, in the light of findings of studies reported in the research chapters that follow, is these authors' handling of their 'straw man' criticism of self-report measures of attachment, that they are "ineffective instruments for assessing what Main and colleagues (1985) called 'dismissing' and 'preoccupied' states of mind with regard to attachment" (Shaver & Mikulincer, 2004, p. 27). The authors proceeded to

review a number of recent studies designed to assess information processing strategies characteristic of these states of mind, other than the AAI, which support their contention that attachment-style scales relate to these strategies. Although their case seems to have merit, it should be noted that these studies, like the AAI, all appear to have been considerably more time consuming and labour-intensive to administer than are short self-report measures, *per se*. Whilst these studies' contribution to validating the shorter measures is certainly of interest, this debate will most likely be resolved only following further research efforts in which both self-report measures of attachment style and the AAI itself are employed.

1.3.7. Conclusion

Generally, the measures described above fall into one of three categories: interviews, q-sort assessments, and questionnaires. Proponents of the AAI would argue that it distinguishes itself from other interviews (and other measures) because it is a more clinical procedure that taps the unconscious as well as the conscious (but see Shaver & Mikulincer, 2004, as reported above). On their own, all of these measures can be—and tend to have been—applied in attachment research that is vulnerable to the criticism cited in the first section of this chapter, of focusing on individual differences in adult attachment at the expense of its ontogeny. That said, the extent of the severity of this criticism, where it applies, must surely depend upon the extent to which attachment in adults remains mutable.

The chapter that follows moves from examination of extant attachment measures to a review of some of the rapidly growing literature on adult attachment. Attention is selectively given to areas that, methodologically and/or in terms of their content, are

deemed of particular relevance to the proposed investigation into attachment, as this construct may operate in the context of the work organisation. In perusing this literature review, the reader may wish to bear in mind that—as is also explained therein—the overall aim of the series of studies presented thereafter will be to develop a measure that is tailored for such research, testing its construct and discriminant validity.

Chapter 2: Review of the Adult Attachment Literature

2.1. Introduction

This chapter is not intended as a review of the whole of the extant and growing field of adult attachment research. Rather, its twin aims are to sample the range of emerging applications and associated research issues in this area of the attachment field, and to begin to provide answers to the four questions posed at the end of the overview of attachment theory offered in the previous chapter. The romantic attachment literature, where the focus on attachment between adults originated, is given particular attention; the extension of this focus from romantic to other close adult relations is also considered. The continuing debate surrounding stability and change is revisited, particularly as this bears on adult attachment. The function of attachment theory as a macro-theory is illustrated. Several content areas within the wider adult attachment literature, deemed particularly pertinent for the proposed investigation of attachment in the workplace, are reviewed. Studies comprising what is, as yet, a slim sub-strand of attachment research, directly concerned with the workplace, are included where appropriate within this overall coverage.

2.2. The case for romantic attachment

As previously noted, Hazan and Shaver (1987) were the first to conceptualise romantic love as an attachment process. Their proposition becomes more palatable (to this reader) as they explain their view of romantic love as a biological, as well as a social process.

This view runs counter to the increasingly popular idea that romantic love is a historical-cultural invention, perhaps a creation of courtly lovers in 13th century Europe (e.g., Averill, 1985; de Rougement, 1940)...in the absence of strong

evidence to the contrary, we hypothesize that romantic love has always and everywhere existed as a biological potential (Hazan & Shaver, 1987, p.523).

Hazan and Shaver's research identified three romantic attachment styles in adults; found the same prevalence of these styles consistently discovered in counterpart 'strange situation' attachment types; and found predicted differences, that accord with attachment theory, in how adults with these three styles both experience and conceptualise 'romantic attachment' relationships (ibid). In response to their hypothesis that respondents of the three types would report different childhood attachment histories, Hazan and Shaver found

no significant differences among the three attachment types in likelihood or duration of separation from parents during childhood, even when analyzed by reason for separation. In addition, parental divorce seemed unrelated to attachment type, even though quality of relationships with parents was associated with type. The best predictors of adult attachment type were respondents' perceptions of the quality of their relationship with each parent and the parents' relationship with each other...The best discriminators between secure and insecure subjects included (a) a relationship between parents that was affectionate ($r = .44$), caring (.32), and not unhappy (-.34); (b) a mother who was respectful of the subject (.43), confident (.35), accepting (.33), responsible (.31), not intrusive (-.42), and not demanding (-.40), among other qualities; and (c) a father who was, in particular, caring (.41), loving (.40), humorous (.40), and affectionate (.30)" (ibid, pp.516-7).

In this seminal paper, the authors conscientiously detailed the conceptual and methodological limits of their research. Along with the limits of the particular measures they used, some of which, they noted, are inherent in any self-report assessment of attachment-related variables, the authors observed that they

probably overemphasized the degree to which attachment style and attachment-related feelings are traits rather than products of unique person-situation interactions...We have focused here on personal continuity, but we do not wish to deny that...a secure person trying to build a relationship with an anxious/ambivalent person might be pushed to feel and act avoidant. An avoidant person might cause a secure partner to feel and act anxious, and so on (ibid).

The authors also noted having found age-related differences within their samples, not reported in the body of their paper, which suggest

continuity between childhood and adult experiences decreases as one gets further into adulthood...The average person participates in several important friendships and lover relationships, each of which provides an opportunity to revise mental models of self and others (ibid, p.522).

Subsequent investigation has endeavoured to examine more closely the transition from infant attachment to adult attachment. Theory and research in the area of adolescent development support the view that an integrated strategy for approaching attachment relationships tends to emerge during this developmental stage (Allen & Land, 1999). Two posited reasons for this are that adolescence brings with it the capacity for abstract reasoning, and that differentiation of self from others—particularly from parents—is a major task of adolescence, one that, indeed, is enabled by this capacity (ibid).

This reasoning may well shed light on how the progression from attachment orientation in relation to a specific attachment relationship is reconstituted as attachment orientation as an overall state of mind, but it does not account for what function attachment might serve in adolescence. In this regard, Allen and Land offered that:

Although one could make a case that adolescent attachment organization is attuned to caregiver behavior because it serves many of the same survival functions as in infancy, this rationale is necessarily weaker in adolescence: Adolescents simply do not need their parents' support for survival in the same way that infants do...A far better case can be made that parent-to-adolescent transmission of attachment organization results from the function of the attachment system in supporting the adolescent's developing capacities for emotion regulation. This in turn may well have provided an evolutionary advantage, in terms of future likelihood of reproduction (ibid, p.330).

Hazan and Zeifman (1999) conceptualised attachment bonds in terms of four defining features—proximity maintenance; separation distress; safe haven; and secure

base—and conducted a study through which they observed age-related changes in the target of attachment behaviours.

Only among the oldest adolescents...did we find what could be considered full-blown attachments to peers—that is, peer relationships containing all four components. Of this minority who considered a peer to be their primary attachment figure, the overwhelming majority (83%) named a boyfriend or girlfriend—that is, a romantic partner (ibid, p.339).

These findings provide evidence to support the premise that in later adolescence some pair bonds qualify as attachment relationships, and moreover that with these relationships there is a shift in the primary attachment figure from parent to peer. However, it should be noted that, as is often the case in this field, these findings were derived from a relatively small sample. This study's overall sample size was limited to 100 children and adolescents. The researchers' conclusion in this instance is therefore based on findings amongst 83% of, say, 25 children (the oldest quarter of the sample).

Romantic attachment researchers concerned with measurement effects have made some effort to assess the salience of attachment-related issues to romantic partners' evaluations of their relationships, independent of measurement procedures. Feeney and Noller (1991) invited subjects to provide open-ended, verbal descriptions of their relationships two weeks prior to completing Hazan and Shaver's (1987) measure of attachment style. Content analysis of these verbal responses entailed identification of issues seen as central to working models of attachment, specifically: openness, closeness, dependence, commitment, and affection. Unsurprisingly, these researchers found what they were looking for:

Each of these issues was spontaneously mentioned by at least 25% of subjects, with 89% of the sample referring to at least one of the five issues. The salience of attachment issues was further supported by the finding that in terms of word

counts, one-fifth of the content of transcripts was devoted on average to discussing these issues (Feeney, 1999, p. 359).

Setting to one side the limitations of particular studies, the investigation of presence, form, function and salience of attachment, as considered by Feeney (*ibid*) with regard to love relationships, would likewise be necessary lines of research inquiry in any effort to develop a full-fledged understanding of attachment in the workplace.

2.3. Traits versus relationships

As noted above, Hazan and Shaver (1987) recognised that their romantic attachment research had an “in-built bias” towards viewing romantic attachment orientation as a feature of personality rather than as relationship-specific. Subsequently, the stability of romantic attachment style has been a subject of considerable investigation within this sub-field of attachment. Perhaps inevitably, these studies have, amongst them, generated support for both sides of the ‘traits vs. relationships’ debate (Feeney, 1999).

On the one hand, for example, interview measures of attachment style have been found more stable than less refined self-report measures (Scharfe & Bartholomew, 1994), suggesting that at least some of the instability in adult romantic attachment is due to measurement error (Feeney, 1999). Also, Kirkpatrick and Hazan (1994) reported findings suggesting that attachment styles are more stable than relationship status. On the other hand, these latter researchers also found that relationship breakups were associated with change from secure to insecure attachment (Kirkpatrick & Hazan, *ibid*) and in a study of young couples, Hammond and Fletcher (1991) found that satisfying relationships at an earlier point were associated with increased attachment security, later.

In her review of the romantic attachment literature, Feeney (1999) noted that:

although attachment measures seem to tap relatively enduring individual differences, and although they are linked with personality (Bartholomew & Horowitz, 1991; Collins & Read, 1990; Shaver & Brennan, 1992), attachment style is not redundant with basic dimensions of personality. Relations between measures of attachment style and personality tend to be modest in size (Feeney, 1999).

Shaver and Brennan (1992) also examined the relative ability of the attachment dimensions and of the personality traits specified in the five-factor model of personality (Costa & McCrae, 1985) to predict relationship outcomes over time. They found that attachment measures were generally better predictors of relationship variables, such as relationship satisfaction, and commitment, than were the five-factor model's variables (Shaver & Brennan, 1992). Recently, Nofle and Shaver (2006) reexamined associations between attachment and the Big Five, using updated measures, and reassessed the relative effectiveness of these two constructs as predictors of relationship quality.

As in the previous research, Nofle and Shaver (*ibid*) reported finding consistently and theoretically meaningful associations between attachment dimensions and the Big Five. Specifically, with an overall sample of 285 university student participants, they assessed attachment using a dimensional measure, the ECR (Brennan et al, 1998), with those not currently in a relationship reporting on the quality of a relationship that had ended, and assessed personality using the NEO-PI-R (Costa & McCrae, 1992), currently the most complete measure of the Big Five. Top level findings were that Neuroticism correlated highly with Anxiety ($r = .52, p < .01$) and also modestly with Avoidance ($r = .17, p < .01$); Extraversion correlated moderately with Avoidance ($r = -.26, p < .01$) and slightly with Anxiety ($r = -.14, p < .05$), both negatively; both Anxiety and Avoidance correlated moderately, negatively, with Conscientiousness ($r = -.34, p < .01$; $-.23, p < .01$). Notably, the researchers found no significant relation between either of the attachment

dimensions and NEO-PI-R Agreeableness, although in their review of earlier comparative studies (e.g., Shaver & Brennan, 1992), Agreeableness had been found highly, positively correlated with secure attachment, and in the present authors' current companion study ($N = 8318$) utilising the BFI (John, Donahue, & Kentle, 1991), both attachment dimensions were found to be correlated (negatively) with Agreeableness.

Nolte and Shaver (*ibid*) also reported finding that, in line with earlier studies, the attachment dimensions consistently predicted relationship quality better than did either the Big Five factors or their facets. Relationship quality was here measured using the 18-item Perceived Relationship Quality Component Inventory (PRQC; Fletcher et al, 2000), which assesses six intercorrelated domains of relationship quality: satisfaction, commitment, intimacy, trust, passion, and love (Nolte & Shaver, *ibid*, p. 190). As the authors concluded, for research on attachment style and close relationships, the Big Five trait scales cannot substitute for attachment measures, although the Big Five traits and facets do serve to "flesh out" some of the detailed nuances of the different forms of attachment insecurity (*ibid*, p. 200).

Feeney (1999) cited developing theory and research concerned with the influence of internal working models on both the selection and experience of attachment partners. Simply put, research in this area suggests that changes in working models will occur "when significant events in the social environment disconfirm existing expectations" (Feeney, *ibid*, pp. 364-5). This line of thinking invites consideration of the use of measurement methodology, such as the AAI, that enables examination of attachment from a more sophisticated, cognitive perspective than has tended to be on offer in romantic attachment research (although, see Shaver & Mikulincer, 2004). Main (1999) drew an

elegant distinction between “stability” and “predictability,” by inference chastising those in the field who would characterise what she regarded as “remarkable transformations” across developmental periods as manifestations of “continuity” or “stability” instead of recognising their developmental nature (Main, *ibid*, pp. 861-2).

Although the preponderance of research on attachment between adults has focused on romantic relationships, advances are also being made in the study of non-romantic adult attachment relationships. One recent example applies attachment theory to an area traditionally of interest to those less concerned with psychodynamics than with genetics; specifically, Tancredy and Fraley (2006) examined the nature of adult twin relationships through the lens of attachment theory. Utilising Hazan and Zeifman’s (1999; 1994) aforementioned four defining features of attachment bonds—proximity seeking; separation distress; use of the other as a safe haven; use of the other as a secure base—these authors reviewed extant qualitative and quantitative research on twins as a basis for generating hypotheses about adult twin relationships as attachment relationships.

Tancredy and Fraley (2006) hypothesised that twins would be more likely than non-twin siblings to regard their twin as an attachment figure, and, most notably, that among twins, co-twins would be placed at the top of the attachment hierarchy. Research findings revealed, overall, not only that twins were more likely than non-twins to form attachment bonds with one another, but also that twins rated co-twins on average amongst the most important in their attachment hierarchy, whereas non-twin siblings on average placed their siblings at the bottom of the hierarchy. Related findings suggested that twin and non-twin siblings differ in their use of their siblings as attachment figures over the course of their development, with older twins feeling more attached to their co-twins than

do younger twins, whereas older non-twins felt less attached to their siblings than younger non-twins (ibid, p. 85). Moreover, although psychological factors such as shared interests and empathy appear to matter more for the development of a sibling attachment bond than structural factors such as family size or age differences between siblings, shared genetic makeup also plays a role in sibling attachment formation. Specifically, non-twins in this study were reported to be less frequently attached than fraternal twins, who in turn were reported to be less frequently attached than identical twins. Results of mediational analyses were “consistent with the notion that genetic similarity promotes certain relational dynamics (such as increased sense of empathy and self-other overlap) among siblings and that these factors, in turn, may help to shape the bond that develops between them” (ibid). This study appeals in part because it demonstrates the capacity of attachment theory to bridge the traditionally separate social psychological and evolutionary perspectives, but also, in terms of the particular aims of this doctoral research, because it clearly demonstrates the applicability of attachment to nonromantic adult relationships.

2.4. Stability and change

Increasing interest in attachment and aging has led to encouraging advances in research on attachment stability. Zhang and Labouvie-Vief (2004) investigated stability of adult attachment style and concurrent covariation between attachment security and coping and well being over a 6-year period, with an age and gender-stratified sample of 370 participants (age range at the start of the study was 15-87 years of age, mean = 47.3, s.d. = 18.8, including 190 women and 180 men). The researchers measured adult attachment style using the Relationships Questionnaire (RQ; Bartholomew & Horowitz,

1991), which they converted into a continuous measure (Zhang & Labouvie-Vief, 2004). They used subscales from the California Psychological Inventory (CPI, Gough, 1987) to assess coping strategies and well being, and the Center for Epidemiologic Studies Depression Scale (CES-D, Radloff, 1977) to assess participants' self-reported depressive symptoms; assessments were made three times over the course of the six year period (Zhang & Labouvie-Vief, *ibid*).

In line with their predictions about attachment stability and fluidity, across the four types of attachment assessed by the RQ, the researchers found that attachment ratings at time 1(t1) significantly predicted the corresponding ratings at time 2 (t2) and time 3 (t3), but that predictability declined between t1 and t3 compared with t1 and t2, although the between-interval difference was significant only for preoccupied ratings (*ibid*). Likewise, the researchers found that fluctuation in attachment security systematically covaried with (defensive vs. integrative) coping, depressive symptoms, and well being; these latter findings were all statistically significant (*ibid*). The researchers also found that stability estimates of attachment style were lower than those of the big five dimensions, supporting the view that, while the latter reflect more enduring personality-related constructs, the former may be more contextually driven, and so more susceptible to dynamic change (*ibid*, p.430).

It is worth noting that Zhang and Labouvie-Vief (2004) reported administering a battery of measures during each 'wave' of data-gathering, including what they described as "an extensive personal background questionnaire and a variety of measures of cognitive, emotional, and personality processes" (*ibid*, p.423). In the main, the researchers refrained from commenting in any detail about these other measures, although

in the context of discussing participant attrition (the returning rates were 82.2% at t2 and 64.3% at t3) they reported that individuals who did not return were somewhat lower in crystallised intelligence and education levels than those who did (ibid). As is noted in a commentary included in the same volume as this paper, one is left with the sense that the findings reported in this study, valuable as they are, may simply be the first course, with additional sustenance yet to come (Shaver and Mikulincer, 2004). For example, it would have been useful to know how crystallised intelligence was measured, as this could have informed selection of measures used to assess exploration at work, a content area considered later in this chapter, and likewise, perhaps, in investigating employment attrition.

In a recent re-examination of the concepts that Bowlby explored in the second volume of his trilogy, Separation, (Bowlby, 1973), Fraley and Brumbaugh (2004) endeavoured to address unresolved issues in the current attachment field regarding stability and change in attachment security, using mathematical modeling methods. Specifically, they adopted a dynamical systems approach, designed to emphasise the ways in which a system of coordinated variables evolves over time, with less of a focus on specific events (e.g., divorce) that may lead to change in security than on general processes that allow such events to sustain and contribute to personality dynamics (ibid, p.87). The authors revisited Waddington's marble analogy and the associated concept of homeorhesis, and provided a cogent summary of Bowlby's concepts of developmental pathways, canalization, and environmental lability (ibid, p.90).

The authors described their computational simulation of Waddington's epigenetic landscape, underscoring what they noted is the often overlooked need to take into account

the role of external influences on the behaviour of the marble. Their argument, which they proceeded to illustrate using computer simulation, was that “because the marble *can* be pushed into a new valley with an appropriate amount of force, the model may not *ensure* stability...The fact that [attachment] theory allows for people to change implies that, even if we postulate homeorhetic mechanisms, Bowlby’s basic model, like Waddington’s, does not ensure stability” (ibid, p.92). They constructed simulations based on two extreme situations, one in which there were no environmental disturbances, and the other in which there were powerful disturbances. As expected, the patterning of stability functions was found to migrate between the two extremes as the degree of disturbance was manipulated (ibid, p.97).

One important application of this exercise was as a means to investigate the pattern of test-retest correlations in different conditions, and thereby enhance understanding of the implications of Waddington’s analogy for conceptualising stability and change. The simulation also made evident that, although in the absence of strong external forces the analogy implies a high degree of stability over time, in the context of strong disturbances the degree of stability will not only weaken but will approach zero asymptotically over time. Thus, although the dynamics can give rise to stability, they do not ensure it, and in other words do not necessarily predict it (ibid, p.100).

The authors developed a mathematical model for each of the three classes of homeorhetic mechanisms identified by Bowlby (1973)—person-environment transactional processes; diminishing sensitivity of working models to environmental influences over time; the establishment of representations that serve as a foundation for subsequent experiences—and investigated implications for patterns of stability and

change observed over time. Although their prototype model does not explicitly suggest that working models should become less sensitive over time, analyses revealed that such a phenomenon emerged naturally from the intrinsic dynamics of the model (p. 111).

The authors reported on meta-analyses first with test-retest data on attachment continuity from infancy to adulthood, and then on attachment stability in adulthood. Findings included that the degree of stability from infancy to adulthood was insufficient to support the stance that early childhood experiences serve as a powerful foundation for the development of adult attachment patterns; nonetheless, although early attachment is not a *strong* predictor of later attachment patterns, it is a *far-reaching* predictor of them. Also, the raw magnitude of test-retest correlations tended to be higher in adults studies than in those observed in childhood; and the data did not behave as if they were approaching zero in the limit (ibid, pp. 115-116).

We believe that the model we have developed in this chapter provides a way to understand how early attachment patterns can exhibit continuing effects across the life span yet exhibit only a weak degree of stability over time. The empirical data that we reviewed indicate that there is a weak to moderate degree of stability from infancy to adulthood but that the stability that exists from age 1 to later ages does not decay as the length of the test-retest interval increases. According to our theoretical and empirical analyses security is just as stable from age 1 to age 2 as it is from age 1 to age 20. Thus it is not the case that early attachment has a *strong* influence on later development but that the influence that exists appears to be *enduring* (ibid, p121).

Sroufe et al (2005), in their 30 year longitudinal study of the development of the person, used multiple informants and multiple measurement methods across multiple points in time, assessing both the individual and the context—both the organism and the surround—in order to track individual trajectories of development and to carry out studies of continuity and change in adaptation (ibid, pp. 83-4). They, too, cited Bowlby's (1973)

elaboration of Waddington's (1957) developmental pathways model, and offered the analogy of a branching tree, where

...serious disturbance would be represented by branches at the far outside of the tree...and such a condition would be the result of a series of branchings that progressively take the individual to the outside. There are four other implications of the model:

1. There are multiple pathways to the same or similar outcomes. Thus, there would be various developmental courses leading to the same 'final common pathway'...
2. The same initial pathway, because of divergent patterns of branching, can lead to multiple outcomes...
3. Change is possible at many (any) points in development. The nodes in the tree may be thought of as points of developmental transition, which provide both new challenges and new opportunities...
4. Change is constrained by prior development. Change becomes more difficult the longer a pathway has been pursued, and certain outcomes may become very unlikely over time (Sroufe et al, 2005, p. 240).

Their field research had the advantage, over Fraley and Brumbaugh's (2004) mathematical modeling, of enabling identification of specific "nodes," and specification, in numerous instances, of particular phases of development that could be identified as influencing particular subsequent outcomes. For example, they found significant associations between middle childhood and later work experiences; these findings are discussed in the final chapter of this thesis (Sroufe et al, 2005; Collins and van Dulman, in press).

2.5. The parsimony of attachment

As elsewhere noted (Shaver & Mikulincer, 2002, 2004), cross-fertilisation between sub-strands within the field of attachment is less common than ideal; the tendency of so-called academic 'colleagues' to plough separate furrows is certainly not limited to those who work within the attachment field. Shaver, Schachner, and Mikulincer (2005) reviewed an article summarising studies of depression and relationship dissolution, in which findings led the article's authors to formulate the theory that

excessive reassurance seeking (ERS) is a cause of depression and is involved in generating negative interpersonal outcomes, such as relationship disruptions and contagious depression (Joiner et al, 1999, cited in Shaver et al, 2005). Shaver et al (ibid) contended that, rather, ERS is an aspect of anxious attachment. In support of this interpretation, these authors cited a wide range of relevant, published studies concerned with attachment and depression, attachment and low self esteem, etc., and proceeded to report on new studies of their own, with samples drawn from a comparable (student) population to that of Joiner et al's, in which the attachment interpretation was empirically supported. Moreover, Shaver et al, (ibid) then pointed to oversights in the operationalisation of Joiner et al's (1999) study that, had these been included, our authors respectfully submitted would also have provided support for the attachment interpretation. Shaver et al (ibid) also noted insights their own studies generated, and assumptions and limitations associated with point-in-time research. Finally, in a pointed message to Joiner and colleagues, Shaver et al (ibid) recommended further research to determine "precisely what is excessive about excessive reassurance seeking and what role it plays in generating depression" (ibid, p. 358).

2.6. Stress and conflict

Much of the romantic attachment research is concerned with the effects of own and/or partner's attachment style on the quality of their relationship. Within this literature, two focal areas that may be of particular interest from the vantage point of organisational research are responses to stress, and responses to conflict. As Feeney (1999) has reminded us:

Three types of conditions activate infant attachment behavior: conditions in the environment, such as alarming events; conditions within the attachment

relationship, such as the caregiver's absence or discourag[ement] of proximity; and conditions of the child, such as hunger and sickness (Bowlby, 1969/82)...

Although some of these specific conditions (e.g., hunger) may elicit attachment behavior only in the helpless infant, the broad typology is relevant to adult behavior. Hence three types of situations are likely to activate attachment behavior in adults: stressful conditions in the social or physical environment; conditions that appear to threaten the future of the attachment relationship; and conditions of the individual, such as ill health (Feeney, *ibid*, p.371).

It has long been recognised that stressful conditions exacerbate normally inherent behavioural inclinations (e.g., Cooper & Payne, eds., 1980). Simpson et al (1992) postulated that, because attachment behaviour is likely to be activated under stressful conditions, individual differences in partners' attachment behaviour would be most pronounced under such conditions. The researchers investigated this proposition through the conduct of a laboratory study in which the female member of each couple was informed that she would be experiencing stressful experimental procedures. Couples were then unobtrusively observed and assessed during the alleged 'waiting period' before these procedures were to begin, to determine the extent of resultant 'support seeking' and 'support giving' behaviour between partners. Attachment style was determined using self-report scales along the two dimensions—anxiety about relationships; comfort with closeness—previously mentioned in the methods section of this review.

Simpson et al (*ibid*) found that support seeking and giving were influenced by both attachment style and (female) subjects' anxiety response to the stressful situation:

Attachment style	Observed anxiety	Support seeking/giving
<i>Secure</i>	<i>High</i>	<i>High</i>
<i>Avoidant</i>	<i>High</i>	<i>Low (withdrawal)</i>

One limitation of this study's design is that it taps into stereotypical male and female roles within the couple relationship. It would be of interest to know, for example, how partners might respond in a conceptual replication in which men, not women, were made anxious; in other words, where men were positioned to seek support (or not), and women were positioned to provide it (or not). Likewise, it would be of interest to know what dynamics would emerge under comparable circumstances within same-sex attachment relationships (both romantic, and not). Nevertheless, as Feeney (1999) noted, the results of this study

highlight the need to define the context of interactions when describing the characteristics of particular attachment styles. It is inappropriate, for example, to describe avoidant individuals as cold and distant, if such descriptors apply only to behavior under stressful conditions (Feeney, *ibid*, p.372).

It should be noted that Feeney herself illustrated the temptation to generalise rather than circumscribe; she would have done better to refer to "individuals with avoidant attachment styles" rather than to "avoidant individuals" in this instance.

Two topical studies on stress and conflict in relation to attachment were conducted in the context of the first Gulf War. In one study, groups with different attachment styles, all living in Israel, were studied in the context of missile attacks then occurring; the groups differed predictably, in accordance with their attachment styles, in terms of both their emotional reactions and their coping strategies (Mikulincer et al, 1993). In the other study, reunion dynamics of US couples were studied after the men returned from having been deployed overseas; both level of marital satisfaction and extent of post-reunion conflict differed in accordance with attachment orientation (Cafferty et al, 1994). Moreover, the second study found links between attachment style and affect during reunion, but only amongst the men. The study's authors suggested that the men's

heightened affect may be accounted for by the more stressful nature of their experience during the separation (ibid).

In her review of the romantic attachment literature, Feeney (1999) cited several laboratory studies all of which provide evidence that attachment differences are more strongly manifest under conditions that are perceived to threaten the relationship. Moreover, where negative perceptions about the partner/relationship were elicited by the research intervention, these perceptions “may reflect negative expectations embodied in working models, supporting the assertion that attachment style exerts pervasive effects on perceptions of relationship functioning” (Feeney, *ibid*, p. 373).

Pietromonaco, Greenwood, and Barrett (2004) examined 21 studies of conflict in adult close relationships, and found that both self-report and behavioural observation studies generally supported the prediction that securely attached individuals behave more constructively, using more effective conflict resolution strategies during conflict than do those who are insecurely attached, and that these more constructive interactions may facilitate the development of intimacy. Some but not all studies found differences in how those with different insecure styles of attachment responded to conflict, but patterns of response were inconsistent across studies. There was some evidence that gender may moderate the way in which attachment behaviour is manifested during conflict. The reviewers noted that precise behaviours that vary as a function of attachment during conflict may depend, in part, on the fit between the behaviour and gender-role expectations (*ibid*, p.284).

Occupational stress is generally viewed as an impediment to effective performance, certainly over the long term. One of the few extant studies concerned with

attachment at work proposed attachment orientation as an intervening variable to account for inconsistent findings in various prior investigations of the hypothesis that social support in the work environment ameliorates work-related strains (Shirmer & Lopez, 2001). Building on Hazan and Shaver's (1990) foundational investigation of attachment and work (discussed later in this review), and on subsequent studies of attachment and work stress (e.g., Quick, Nelson, Joplin, & Quick, 1992), Shirmer and Lopez investigated the contributions of adult workers' attachment orientation (on the two dimensions of anxiety and avoidance) and perceived supervisor support on three indexes of work-related strain (work stress intensity; symptoms, and job satisfaction). The researchers, who were based at Michigan State University, identified a representative sample of 250 adult employees from "a large Midwestern university," to whom they distributed both a categorical and a continuous measure of attachment, as well as a brief scale assessing perceptions on supervisor support, an inventory designed to assess organisational stress and job risk, a physiological and psychological symptom checklist, and a measure of job satisfaction; 117 (70 female) completed responses were obtained and analysed (Shirmer & Lopez, *ibid*).

The researchers' primary objective was to investigate the conjoint contributions of supervisor support and workers' attachment characteristics to the prediction of work-related strain; in particular, they were interested in whether workers' adult attachment orientations toward anxiety and/or avoidance interacted significantly with perceived levels of supervisor support to predict scores on work strain indexes. As the authors reported, the clearest picture of effects emerged when adult attachment was assessed dimensionally and included with supervisor support in the regression analyses of strain

indexes. When supervisor support was controlled, adult attachment orientations (as a block) explained significant unique variance in work stress intensity and symptoms. Job satisfaction showed no relationship to these variables as a block; however the individual beta weights of two attachment-related predictors were significant, indicating a pattern wherein low anxiety and high avoidance amongst workers best predicted job satisfaction. The researchers interpreted this pattern to suggest that workers who are less anxious about interpersonal rejection and less invested in forming close relationships are more likely to be satisfied with their jobs (ibid, p.29). With respect, this interpretation should at the very least have been circumscribed to the particular organisational culture from which this sample was drawn (although of course even then the researchers would need to have addressed issues related to self-selection bias, as only half of the representative sample they originally approached in fact participated in this study). Additionally, it would have been of interest to know what, if any, bearing job role and gender might have had on these findings. Nonetheless, overall, this study lends support to the view that adult attachment does indeed operate in the workplace, and provides some insight into how it may do so.

Competency in conflict management is widely regarded as a priority for managers. As with the work-stress study reported above, it would seem of likely value to those concerned with the effective management of people to understand the differing effects of conflict (which of course may precipitated by stress and/or experienced as a source of stress) on individuals whose attachment orientations at work differ.

2.7. Attachment and employment

To date there has been scant empirical research directly investigating the relationship between attachment and work. In an extensive review of adult attachment

measures, which considers their implications for theory and research, just two studies referencing work were reported (Crowell & Treboux, 1995). In one, a discriminant analysis of the AAI, in a sample of women recruited from the general population, the form of discourse used in an interview about employment was found to be orthogonal to the individual's balanced, uninvolved, or over-involved attitude towards her job (Crowell et al, 1996). However, precisely because the Employment Experience Interview (EEI) measure used in this study was designed as a test of the AAI's ability to assess discourse coherence in relation to attachment rather than more generally, "as much as possible, the interview avoided eliciting discussion of the interpersonal relationships in the workplace so as to minimize overlap of topic with the AAI" (ibid, p. 2589). It would thus be a mistake to conclude from this study that attachment does not operate in the workplace; indeed, the fact that this research entailed an effort to avoid focusing on work relationships implies just the opposite. Moreover, as the authors report, the EEI was developed specifically for use in assessing the discriminant validity of the AAI; no information was provided about any efforts to validate this new measure of employment experience (ibid).

In the other work-related study reported by Crowell and Triboux (ibid), Hazan and Shaver (1990) once again broke ground in the adult attachment arena by treating work as a conceptualisation of exploration for adults. This study, which is examined under the content area of attachment and exploration that follows, also inspired the research on attachment and work-stress mentioned earlier in this review, as well as two others on exploration referred to below.

2.8. Attachment and exploration

Hazan and Shaver (1990) utilised a similar methodological approach to that employed in their earlier research on romantic attachment (Hazan & Shaver, 1987) to conduct preliminary research on attachment and work. Specifically, they proposed that attachment and exploration, in childhood, are functionally similar to love and work, in adulthood, such that “the balance between attachment and exploration associated with healthy functioning early in life is, in important respects, similar to the love/work balance that marks healthy functioning in adulthood,” (Hazan & Shaver, 1990, p.270). The researchers utilised the same single item, self-classification method to assess respondents’ attachment types that they had employed in their earlier romantic attachment research (Hazan & Shaver, 1987). This was supplemented, in the first instance, by questionnaire items drawn from the job satisfaction literature, relationship/work preference items, and items concerned with demographics. Analysis was conducted on the first 670 sets of responses returned to the researchers. A subset of 290 of these same respondents, those who included their address with their first responses, subsequently received a supplementary love and work questionnaire (ibid).

The researchers hypothesised that individuals who characterised themselves as securely attached would report a secure orientation to work, including relatively higher ratings of work success and job satisfaction, fewer work-related fears and worries regarding either their own performance or co-workers’ evaluations, and relatively healthy work habits. Anxious/ambivalent attachment was predicted to be associated with a preference for working with others rather than alone, a tendency to become over-obligated as a way of pleasing others, and a feeling that one’s own contribution is

undervalued. Their preoccupation with attachment concerns was predicted to interfere with work, leading to a poorer track record on timely completion of work tasks, and generally poorer performance. Avoidant types were predicted to prefer working alone, and to tend toward workaholism as a means of avoiding socialising. Secure attachment was predicted to be associated with higher levels of physical and psychological health relative to either form of insecure attachment (Hazan & Shaver, 1990).

In line with these hypotheses, study respondents who were identified as 'secure' were found to approach their work with confidence, to enjoy work activity and to be relatively unburdened by fear of failure. These respondents were found to value work but to tend to value relationships more, and typically not to use work to satisfy unmet needs for love, nor to use work to avoid social interaction. By contrast, respondents categorised as 'anxious/ambivalent' reported that love concerns interfered with work performance, and reported fear of rejection for poor performance. This subgroup also had the lowest average income of the three attachment types, even when education was controlled for as a variable. Respondents in the 'avoidant' subgroup were found to use work activity to avoid social interaction. Their income was on average comparable to that of the secure group, but they reported less job satisfaction. Secure attachment was also found to be linked to a greater sense of overall well being, and less illness. In summary, the researchers found considerable evidence to support their hypotheses (Hazan & Shaver, 1990).

As Hazan and Shaver themselves acknowledged, their comparison between early childhood play and exploration, on the one hand, and work experience, on the other, is rather simplistic. Moreover, despite their postulated conceptual analogy, they may

actually have obtained data on how the attachment system operates in the workplace—how, for example, individuals with different attachment styles relate to colleagues—rather than investigating a separate, exploratory behavioural system. Their use of a single-item measure of attachment type calls up the same concerns previously noted (Collins & Read, 1990). The usual reservations regarding self-report measures and point-in-time (vs. longitudinal) research also apply. Nonetheless, their research lifted the curtain on a potentially rich new area for application of attachment theory.

Elliot and Reis also endeavoured to pursue the attachment-exploration link in adulthood, and in particular to address the need for a more rigorous conceptualisation of the exploratory behavioural system, specifically for adults (Elliot & Reis, 2003). They theorized that the attachment-exploration link in adulthood could be examined by investigating relationships between adult attachment constructs and adult achievement motivation constructs (*ibid*). Starting with the premise that there are both ‘optimal and nonoptimal’ forms of attachment, and also ‘optimal and nonoptimal’ forms of achievement motivation, in a set of four studies the researchers investigated the associations of categorical and continuous, dimensional measures of attachment, on the one hand, with achievement motives and goals, on the other (*ibid*, p.319).

Study participants were in each case university undergraduates, who participated for extra credit. Sample size ranged from 165 to 198 participants. Across four studies, attachment type, or style, was determined first using Hazan and Shaver’s (1987) categorical measure, then Mikulincer et al’s (1990) romantic attachment questionnaire, and finally Brennan et al’s (1998) Experiences in Close Relationships measure, which was employed for both study 3 and study 4. Achievement motives were assessed using

first Herman's (1990) measures of need for achievement and fear of failure, and then Schmat's (2002) Achievement Motive Grid-Short, which the researchers described as a semi-projective procedure (Elliot & Reis, 2003, p.323); achievement goals, challenge and threat construals, and competence valuation were assessed using measures previously published by Elliot and Church (1997), Elliot and McGregor (2001), Elliot and Sheldon (1997), and McGregor and Elliot (2002).

The four studies were designed to test two general hypotheses, that "in adulthood, as in infancy, secure attachment affords optimal, unimpeded exploration in achievement settings..." and that "insecure attachment interferes with optimal exploration in achievement settings" (Elliot & Reis, p.319). Restated, the researchers hypothesised "that securely attached persons are able to construe achievement situations as a positive challenge and fully engage in the appetitive pursuit of competence, whereas insecurely attached persons construe achievement situations as a threat and self-protectively seek to avoid incompetence" (ibid). Overall results of the four studies were found to provide strong support for the researchers' general hypotheses (ibid).

The first study revealed that:

Securely attached participants were higher in need for achievement, lower in fear of failure, and adopted more approach (relative to avoidance) personal achievement goals than did insecure participants, both avoidant and anxious/ambivalent. Secure participants adopted more mastery-approach goals than avoidant participants, and adopted fewer performance-avoidant goals than anxious/ambivalent participants. These findings indicate that although avoidant and anxious/ambivalent attachment are linked to the same underlying motivational tendencies, they may lead to different forms of strategic goal pursuit in actual achievement settings (Elliot & Reis, p.321).

The researchers' use of a categorical measure of attachment in this first study precluded determination of which specific attachment variable was responsible for

observed results (e.g., whether the mastery-approach findings were driven by secure attachment, avoidant attachment, or both). The continuous attachment measure used in Study 2 enabled the researchers to obtain information about the nature of the associations found in Study 1. Specifically, the second study found that:

Secure attachment was positively related to need for achievement and mastery-approach goals. Avoidant attachment was positively related to fear of failure. Anxious/ambivalent attachment was positively related to both fear of failure and performance-avoidance goals (ibid, p. 322).

From these findings, the researchers could infer that, in their first study, secure attachment was responsible for the need for achievement findings, and likewise for the mastery-approach goal results, while both types of insecure attachment were responsible for the first study's fear of failure findings, and anxious/ambivalent attachment was responsible for that study's performance-avoidance goal findings.

Elliot and Reis (2003) assumed that attachment orientation, as a variable, is stable over time, and indeed in their first study assessed achievement motivation prior to assessing attachment, despite having predicted that attachment orientation influences achievement motives and goals. They corrected this procedural order in their subsequent studies, but retained the view, stated without discussion, that attachment orientation is stable. As noted elsewhere in this review, within the attachment literature the question of stability remains a subject of considerable debate, so to presume attachment stability without even discussing the matter is highly problematic.

Whilst to their credit they did use a range of attachment measures, the researchers drew these measures from the 'romantic attachment' strand of the literature, and likewise used only self-report measures of attachment, but made no mention of this, and certainly did not consider the implications in their discussion. This oversight is

particularly surprising as, in their conclusion, the researchers cited Main's (1999) overview and evaluation of the attachment literature. In this overview, she quite specifically called for "integration of the now somewhat divergent domains of interview and self-report assessments of attachment" (Main, 1999).

Questionnaire items cited for illustrative purposes indicate that all of the measures co-authored by Elliot and used in these four studies to assess aspects of achievement were framed within the context of classroom learning, e.g., "It is important for me to do well compared to others in this class," (Elliot & Reis, 2003, p.320). Whilst such measures seem well suited to the undergraduate students who served as participants in these four studies, the researchers may have been a bit precipitous to presume that academic achievement motivation necessarily generalises to other contexts, such as sport and occupational settings (ibid, p.328). Most disturbing, their assertion that "thus, it is not only the case that a difficult day at the workplace may be easier to withstand if one has an available, accepting, and responsive partner to return to at day's end, but, more proactively, the availability of a supportive attachment figure may also facilitate appetitive engagement in the work itself," substitutes the individual's literal and presumed 'romantic attachment' relationship for his or her own internal working model with regard to attachment (ibid, p.328). This assertion and the underpinning assumptions are unsubstantiated and not even discussed. Furthermore, this assertion invites a line of reasoning with regard to individual's attachment orientations that, in the workplace, would currently be illegal in terms of, for example, recruitment and employment decision-making.

Although not focussed on work, two other studies of adult attachment, concerned on the one hand with exploration (Green & Campbell, 2000) and on the other with emotional intelligence (Kafetsios, 2004), are also of interest as these may bear on conceptualisations of the exploratory system in the work context. Green and Campbell operationalised exploration, which they defined as “approach behaviour toward new and complex stimuli,” in the social and leisure realms (ibid, pp.454). They conducted two studies with college students, one using correlational (questionnaire) and the other experimental methods, in the latter case by activating different attachment schemas hypothesised to be held in memory, using priming techniques (ibid). The authors reported finding significant differences between different attachment orientations, both as assessed and as primed, and expressed interest in intellectual, social, and environmental exploration. In sum, they found that, whether treated as a chronically accessible individual difference construct or a contextually activated construct, insecure attachment was associated with less interest in exploration than secure attachment. They offered the converging results of their two studies as evidence that the attachment and exploratory systems are closely linked in adulthood (ibid, p.459).

Kafetsios (2004) aimed in part to test EI and attachment connections across the life course, in keeping with research he cited on the development of emotional intelligence with age, and the limited and less conclusive literature on the emotional consequences of attachment over time (ibid, pp.132-133). Specifically, the researcher hypothesised 1) that secure attachment would correlate positively with emotional intelligence abilities; 2) that avoidant and anxious/preoccupied would be negatively related to these abilities (no predictions were made as regards dismissing or fearful); 3)

that older participants would have higher scores on EI ability measures, and 4) that females would score higher than males on these measures. Across a mixed-age sample ($N = 239$; $M = 38.7$ years, $SD = 13.5$ with two peaks at 20 and 48 years), and utilising the RQ to assess attachment, along with a variety of EI ability measures (ibid, pp. 134-135), Kafetsios reported finding considerable support for his first and third hypotheses, more limited support for his second hypothesis (and an unpredicted, positive relationship between dismissing attachment and two measures of EI abilities, both concerned with “emotion understanding”), and support for his fourth hypothesis solely in relation to nonverbal abilities.

Whilst investigation into the relationship between attachment and EI is laudable, surely the relationship between emotional intelligence and attachment “across the life course” would be far better assessed through longitudinal research than with a relatively small (albeit not by the standards of many attachment studies) correlational sample that purported to represent the full age range, but wherein 44% of the participants were between 19 and 29 years old (with a sample “peak” at age 20). Moreover, assessment of emotional intelligence through the measurement of EI *abilities* has elsewhere been found to be highly unreliable; no consideration appears to have been given, here, to the use of a more psychometrically valid measure of *trait* EI (Petrides & Furnham, 2000, 2003). Nevertheless, investigation of the relationship between adult attachment and EI seems a potentially fruitful line of inquiry in the context of the work organisation, both because emotional intelligence has become of substantial interest to organisational practitioners, and because trait emotional intelligence could serve as a measure of some aspects of the exploratory system as manifested in the organisational context.

2.9. Other areas of investigation with potential for application in organisations

In recent research on adult attachment style and interpersonal distance (Kaitz et al, 2004) the researchers conducted a pair of studies in which they investigated the general hypothesis that adults manage interpersonal physical distance with others in accordance with their attachment style. In their first study, they used a 3-category attachment style questionnaire (Mayseless & Scher, 2000), adapted from Collins and Read's (1990) questionnaire, to determine attachment style; in their second study they used Bartholomew and Horowitz's (1991) Relationship Questionnaire. The researchers also used two different observable procedures, in the two studies, to test for reaction to, and choice of, interpersonal proximity with an unfamiliar person. Their aim was to use their findings as "a reflection of adults' comfort with or desire for emotional closeness with others...therefore, linked to their attachment style and underlying working models" (Kaitz et al, 2004, p. 298).

Subjects in both studies were students at Hebrew University, Jerusalem. Proximity procedures in both instances involved use of experimenters who were not known to the students. The researchers explained that this was "consistent with the contention that working models impact general views of the social world (Collins & Read, 1990) and, correspondingly, behaviour with a range of social partners, besides attachment figures" (Kaitz et al, 2004 p. 300). Overall conclusions from results of the two studies were acknowledged to be provisional, due in part to small sample sizes and other particulars of the samples, but nonetheless suggested "that adults who are avoidantly attached, particularly those who are fearfully avoidant, maintain a farther distance from others during a first meeting than do securely attached individuals, and that they are less

tolerant and more reactive to attempts by (unfamiliar) others to come close” (ibid, p. 300). In the second study, findings of regression analyses included that the ‘positivity of self’ model (Bartholomew & Horowitz, 1991) made a significant and unique contribution to the prediction of distance, while ‘positivity of other’ did not. As the researchers were careful to point out, these latter results cannot be generalized to interactions with known others, since models of others may contribute more substantially to feelings and behaviours with known others than with unfamiliar others (Kaitz et al, 2004, p. 301), and indeed in some instances have been shown to do so (e.g., Simpson et al, 1999).

In his review of the AAI, Hesse (1999) identified a number of new areas of application, including several that might well have relevance for organisational research on attachment. In his summary of ‘Adult Attachment Related to Violence,’ Hesse (ibid) reported that “Levinson and Fonagy (1998) found evidence for an association between insecure adult attachment and criminality, particularly with respect to crimes against persons as opposed to less violent crimes” (Hesse, ibid, p.416). It is possible that ‘white collar crime’ of the sort that manifests blatant disregard for the interests of those who depend upon them (e.g., in the cases of Enron; Worldcom) might also tend to be perpetrated by, say, individuals categorised as ‘Dismissing’ rather than as ‘Secure/Autonomous’ in attachment terms. A related line of inquiry might entail study of the relationship between attachment orientation and business ethics.

Hesse also reported on several studies of ‘Political Extremism and Authoritarianism,’ in which, respectively, right wing extremists tended to be classified as ‘Dismissing;’ college students classified as ‘Dismissing’ scored higher on an authoritarianism scale; and college students classified as ‘Dismissing’ were considered

hostile (and anxious) by their peers (ibid, p.416). In this same vein, investigation into the relationship between managers' attachment orientations and their respective management styles would be of interest. Furthermore, Main (1999), in proposing research into the formation of new attachments later in life, specifically suggested the conduct of studies on the formation of attachments to leaders; although she had adolescents in mind as the followers, surely this focus could also be taken up in the workplace (ibid, p.863).

Finally, Hesse (1999) considered the relationship between Adult Attachment status and psychotherapy; in particular, he noted applications of the AAI to assess the outcomes of therapeutic interventions. For example:

Fonagy examined changes in overall functioning (on the DSM's Global Assessment of Functioning Scale) between admission and discharge as well as a set of other potential predictors (below)...Across the 82 subjects, the proportion of individuals who improved was higher in the dismissing group (93%) than in the preoccupied (41%) and secure/autonomous (3 of 9 subjects, or 33%) groups, with effect sizes of 1.84, 1.09, and 0.51 respectively. Not one of the other potential predictors, including the Symptom Checklist-90, the Beck Depression Inventory, the Eysenck Personality Questionnaire, the Spielberger State-Trait Anxiety Inventory, or DSM Axis I and Axis II diagnoses, was predictive of responsiveness to therapy (Fonagy et al, 1995, cited in Hesse, ibid, p.418).

Similarly, it should be possible to assess the efficacy of management development interventions along such lines. Of course, use of the AAI for this purpose could in some respects prove to be its own impediment, in the light of the cost and time involved first in certification and then in administration of it.

Slade (1999) has also looked at the potential contributions of attachment theory and research to the theory and practice of individual psychotherapy. Slade's observations about how the application of attachment theory might aid therapists by supplementing their ways of listening to and understanding clinical material could also prove useful to the executive coach whose work entails dealing with relationship issues at work.

Likewise, Bowlby's notion that optimally the therapist will act as a 'secure base' for the patient (Bowlby, 1988) could also be applied, for example, to the role of the outplacement consultant working with clients who have experienced job loss. Moreover, as Crowell et al (1999) pointed out vis a vis the therapist, to be maximally effective, the outplacement consultant's approach to assisting individuals in 'working through' such loss may need to vary along attachment-orientation lines.

As the recent attachment literature demonstrates (e.g. Rholes and Simpson, eds., 2004), the application of attachment theory to matters of health and well-being remains a central focus. In their recent review of the adult attachment literature, 4 out of 14 chapters (excluding their introduction) are concerned with clinical application (ibid). This is hardly surprising, for a theory that, after all, was initially developed by a practicing psychiatrist and psychoanalyst (Holmes, 1993). Whereas much of the early research in this area investigated correlates of different attachment orientations with clinical disorders, and demonstrated that individuals with insecure attachment orientations tend to be more vulnerable to various psychological problems, more recent research has moved in the direction of investigating the processes that render insecurely attached individuals more susceptible, and helping to clarify ways in which concepts within the theory may be used in treatment (Rholes & Simpson, 2004, p. 11). Kobak, Cassidy, and Zir (2004), for example, examine attachment-related trauma, as measured by the AAI 'unresolved' category, and posttraumatic stress disorder (PTSD), and consider implications for adult adaptation. At an organisational level, these implications are surely relevant in cataclysmic cases, such as, for example, for those businesses directly—or even

indirectly—affected by the events of 9/11, where leadership requirements might well be conceptualised in attachment terms.

2.10 Conclusion

In summary, the literature does indeed support Bowlby's contention that attachment is life spanning. However, to date empirical research in the field has been complicated by the challenge of assessing a phenomenon, not directly accessible, during different developmental stages. Also, generalisability of findings has been confounded by the use of multiple disparate measures often even within a given developmental stage—for the purposes of this review, say, during adulthood—so that, rather than assessing different aspects of the same construct, apparently comparable research may be tapping into different, perhaps even unrelated phenomena. Not surprisingly, there appears to be considerable consensus amongst attachment researchers across sub-strands within the field that, to some degree, attachment orientation takes hold and differentiates amongst individuals in terms of a host of attitudinal, emotional and behavioural responses in given circumstances. However, the extent to which a particular attachment orientation has been internalised by adulthood, independent of a specific attachment relationship, remains a matter of debate.

Even Main (1999), whose work with attachment at the level of representation has provided substantial support for the notion that attachment orientation does come to be held in the mind independent of a specific 'other,' noted the "puzzle" that, from what she characterised as the very limited amount of relevant research thus far conducted, early attachment to the mother appears to have a stronger influence on the individual's subsequent attachment status than does early attachment to the father (*ibid*, p. 859). As

she reported, this appears to be the case even in instances when, as an infant, the individual had been found to be insecure with the mother and secure with the father, and indeed even when the father stayed home and the mother worked outside the home (ibid). What Main left unsaid is the possibility, suggested by these limited findings, that what the AAI normally assesses may be the individual's internalised attachment relationship with his or her mother, rather than an overall state of mind with respect to attachment per se, that is independent of any specific relationship. To some extent as a corollary, the extent to which attachment orientation can change, in adults, and the factors that will cause it to do so, also remain subject to debate, compounded, of course, by the debate about whether and to what extent the AAI and other measures of attachment are in fact tapping the same construct.

Despite these caveats, there is sufficient evidence that attachment exists as a construct, affecting adults in at least some important relationships with one another, to warrant further investigation than has as yet been carried out into whether, and how, it might be activated and manifested in the workplace. To the extent that the attachment system is indeed activated at work, as the initial work-related attachment research suggests, there are a host of potential application areas for investigation, as the foregoing review has endeavoured to show.

The seven studies presented in the chapters that follow aim to assess attachment orientation as it may be manifest in the workplace, and may affect work relationships, job satisfaction, and job performance. As is described in the first of these studies, a self-report measure of attachment at work was developed for use in this research. With research participants, this measure has been referred to as the Work Relationships

Questionnaire. In the research chapters that follow, it is referred to as the Adult Attachment at Work measure (AAW). Taken together, these studies serve in part as vehicles through which to test this measure's construct, discriminant, and predictive validity. A summary overview of the measures employed in these seven studies is provided at the end of this chapter.

Before turning to these studies, it should be noted that, as originally conceived, Study 1 was to have been conducted within one large, well-established corporation, and was to have entailed administration of the Adult Attachment Interview (AAI; George et al, 1996) to members of a senior operational board of this business. Based on direct observation and previously gathered data on work colleagues' perceptions of these board members, the distribution of AAI classifications within this small sample was hypothesised to be atypical in terms of the normal distribution of main categories of attachment (e.g., Hesse, 1999). Specifically, AAI Dismissing state of mind with regard to attachment was hypothesised to be the predominant classification within this group.

Study 1 was also to have entailed administration of a compendium of self-report questionnaires to the more than 100 managers who reported to the members of this board. The compendium included the AAW and a number of validated measures of constructs for which associations with attachment, should these be revealed, were expected to be of interest to both psychologists and organisational practitioners. Aggregate results could have enabled preliminary conclusions to be drawn about the relationship between the predominant attachment orientation of management at the top of this organisation, and that within the workforce below. Results also would have permitted preliminary assessment of the extent of concurrent validity between these two different measures of

adult attachment, viz., the well-established AAI (George et al, 1996) and the new AAW inventory. Unfortunately, a corporate reorganisation disrupted this research, and although the AAI had been administered as planned, the questionnaire survey could not be distributed as originally intended. Instead, this survey was distributed across a wide range of public and private sector and non-profit organisations, and became the study that is now described as Study 1, in the next chapter.

Results of the pilot AAI application are nonetheless worth noting, here. These conformed to predictions, revealing a skew in the direction of Dismissing, in the distribution of attachment classifications, within the membership of this operational board. Specifically, two sets of AAI classifications were generated, which after conferencing provided an 83.33% rate of agreement between coders, wherein fully half of the sample were classified as Dismissing with regard to attachment, and the other 33.33% were classified as Autonomous. Moreover, where conferencing failed to reconcile discrepant results between coders, in each instance the transcript was classified as Dismissing by one coder and as Autonomous by the other; no main classification of Preoccupied was made by either coder. Furthermore, among transcripts confirmed as Autonomous, sub-classification tended towards some setting aside of or restricting of attachment. Thus, within this small, board-level managerial sample, the percentage of AAI transcripts that were classified as Autonomous was found to be substantially lower than might reasonably have been expected based on distribution trends in mainstream attachment research. Likewise, the percentage of transcripts classified as Dismissing was far higher than one might reasonably have expected. For example, in a meta-analysis of 286 AAI's from samples of non-clinical fathers, 62% were classified as Autonomous,

22% as Dismissing, and 16% as Preoccupied (van IJzendoorn & Bakermans-Kranenburg, 1996, p.11). Sampling limitations preclude generalisation from this small pilot but do invite speculation about what the general trends might be, regarding state of mind about attachment, amongst those who wield board-level authority in the corporate world, and about the implications in terms of group dynamics in the boardroom. For now, however, let us turn from such speculation to examination of a series of seven studies that together comprise a broader investigation of attachment at work.

Table 2.1: Attachment at work: overview of studies and measures

		<i>Measures</i>				
		Attachment	Personality	Other traits	Work related variables	Other variables
<i>Validity</i>						
Construct	Study 1	AAW	NEO-FFI	Self esteem, TEIQ		Gender, age, marital status, Number of children
	Study 2	AAW, AAS	NEO-FFI	TEIQ, TIE		Gender, age, marital status
Discriminant	Study 3	AAW	NEO-PI-R	Self esteem	Job level/type	Gender, age, marital status
	Study 4	AAW, RQ	NEO-PI-R	Self esteem, TEIQ, TIE	Employment status	Gender, age, marital status
	Study 5	WRC	NEO-PI-R HDS	TEIQ GMA	Career potential, Job level/type	Gender, age
Predictive (incremental)	Study 6	AAW	NEO-FFI	Self esteem	Job involvement, Job satisfaction, Intrinsic motivation, Job characteristics	Gender, age, marital status, Number & location of children, Loss and trauma
	Study 7	AAW	NEO-FFI	Self esteem, TEIQ (mini)	Job level, Assessed potential, Job performance	Gender, age, marital status, Loss and trauma

Note: AAW = Adult attachment at work, AAS = Adult attachment styles (Collins & Read, 1990); GMA = Graduate & Managerial Assessment of general mental ability (Blinkhorn, 1985); HDS = Hogan Development Survey (Hogan & Hogan, 1997); Job involvement; job satisfaction; intrinsic motivation (Cammann, Fichman, Jenkins & Klesh, 1979; Seashore, Lawler, Mirvis & Camman, 1982); NEO-FFI; NEO-PI-R (Costa & McCrae, 1992); RQ = Relationship Questionnaire (Bartholomew & Horowitz, 1991); Self esteem (Rosenberg, 1965); TEIQ = trait emotional intelligence (Petrides, 2001; Petrides & Furnham, 2003); TIE = Typical emotional intelligence (Goff & Ackerman, 1992); WRC = Work Relationship Categories questionnaire.

Chapter 3: Attachment at Work: Preliminary Investigation of Its Construct Validity

3.1 Introduction

The literature on adult attachment has been expanding since the 1980's and by now includes a focus on adults' attachment orientations, or styles, as these relate to their own childhood attachment orientations (e.g., Main & Hesse, 1998), to their children's attachment orientations (e.g., Fonagy, Steele, & Steele, 1991), to the nature of their romantic relationships (e.g., Hazan & Shaver, 1987) and other close, personal relationships (e.g., Bartholomew & Horowitz, 1991) and to a host of other correlates, ranging from patterns of substance use and abuse (e.g., Schindler et al, 2005) to correlates of attachment orientation among aging adults (e.g., Consedine & Magai, 2003). Intergenerational research on attachment (e.g. Fonagy, Steele, & Steele, 1991) has shown that individuals' attachment orientations affect their caregiving styles and the attachment relationships their children form with them. If, likewise, attachment orientation were found to account for and differentiate amongst particular sets of interpersonal behaviours and ways of conducting relationships in work organisations—if, for example, different attachment orientations were found to have corresponding, identifiable management styles—the theory would assuredly provide a useful framework for organisational diagnosticians and practitioners.

As was illustrated in the previous chapter, the relatively slim extant literature on attachment and work has tended to treat attachment as if it were a personality-like trait that extends across contexts; attachment orientation or style has thus been measured using one of the existing instruments originally developed to assess attachment in the context of romantic or other personal dyad relationships (e.g., Hazan & Shaver, 1990; Shirmer &

Lopez, 2001). One exception to this, a series of studies conducted by James C. Quick and colleagues (e.g., Joplin, Nelson, and Quick, 1999) entailed developing a categorical assessment approach based on probative interviews with successful executives during the 1980's and subsequent consultation directly with John Bowlby (Quick, J.C., personal correspondence). This led to the formulation of three orientations, "labelled in the management literature as: interdependence (secure or self-reliant), counterdependence (avoidant) and overdependence (anxious-ambivalent)," (Joplin et al, *ibid*, p.784). Quick, a professor of management and now chairman of the Goolsby Leadership Academy at the University of Texas, Arlington, does not regard himself as a psychometrician and reports that he and his colleagues have not been as systematic, since, as they were in the research cited above; however, they continue to use this "three attachment style solution" with their graduate and undergraduate leadership students, since "we have always thought that Ainsworth and Bowlby had it right with the three attachment style descriptions," (Quick, J.C., personal correspondence).

Study 1

3.2 Study 1 Introduction

This first study is concerned with the relationship between adults' attachment orientations and how they interact with others in the workplace. For this study, a survey questionnaire was constructed that included, in part, items adapted from an instrument originally designed to measure adult attachment style in the context of romantic relationships (Collins & Read, 1990). This study's primary purpose was to assess the adapted measure's construct validity. The questionnaire was distributed across multiple organisations, as described below. In lieu of controlling for exogenous variables through use of a single work environment, this distribution strategy enabled assessment of the adapted instrument's reliability across widely varied organisational contexts.

Four major hypotheses, three of which consist of sets of hypotheses, were formulated regarding the Adult Attachment at Work (AAW) inventory used in this study, and its relationship with other established psychological constructs. The first set of hypotheses concerned whether and to what extent findings support the premise that attachment is indeed present and active in the workplace. The second set concerned the relationship between the AAW inventory and a well-established personality measure of the Big Five personality traits, the NEO-FFI (Costa & McCrae, 1992; John, 1990). The third hypothesis concerned the relationship between the AAW inventory and a construct that is generating growing popularity in the field of management development, Trait Emotional Intelligence (Petrides & Furnham, 2000; 2003; Golman, 1995). The fourth set concerned the relationship between the AAW inventory and three other constructs—self

esteem, organisational commitment, trust in people—deemed likely to be related to attachment in the workplace, should H1 be confirmed.

Recall that Hazan and Shaver (1987) translated the three main infant attachment classifications from ‘the strange situation’ (Ainsworth et al, 1978) into terms appropriate for adult relationships, retaining the earlier researchers’ names for these classifications, that is: ‘secure,’ ‘avoidant’ and ‘anxious/ambivalent.’ Recall, too, that the Adult Attachment Style (AAS) questionnaire (Collins & Read, 1990)—the romantic attachment inventory from which the AAW was adapted—comprises items for the most part drawn directly from Hazan and Shaver’s (1987) Adult Attachment Style measure (see Table 1.3). Although it seems likely that Collins and Read would have sought to find factors that directly corresponded to these three discrete styles, in fact they reported finding three factors that did not do so, but that the authors suggested “revealed three dimensions (Close, Depend, and Anxiety) that underlie the styles” (Collins & Read, 1990, p.647).

Accordingly, this study’s first set of hypotheses, H1, were framed to follow what may well have been Collins and Read’s original premise. Specifically, H1a: Factor analysis will reveal three distinct factors that directly correspond to Hazan and Shaver’s (1987) ‘secure,’ ‘avoidant’ and ‘anxious/ambivalent’ attachment styles. This hypothesis will be tested via Principal Component Analyses of the data. H1b: Overall sample results will indicate a distribution of attachment orientations that is in keeping with the usual findings in other non-clinical attachment studies. Specifically, findings reported in both ‘strange situation’ studies (e.g., Ainsworth et al, 1978) and AAI studies (George et al, 1996) and meta-studies (van IJzendoorn & Bakermans-Kranenburg, 1996) show a typical distribution of major classifications in which the predominant classification, over half the

given sample, is 'secure' (or 'secure/autonomous,' in the AAI), and within the 'insecure' categories, a substantially greater percentage is classified as 'avoidant' ('dismissing') than as 'anxious/ambivalent' ('preoccupied'). Therefore, for H1b: this survey's sample results will show frequencies, across the three factors predicted in H1a, that are comparable to a typical distribution of major classifications in mainstream attachment research. Specifically, results will show a central tendency toward secure attachment at work.

The second set of hypotheses, H2, is concerned with the relationship between the Big Five personality traits (Costa & McCrae, 1992) and AAW scores. As Crowell et al (1999) reported, Shaver and Brennan (1992) and Carver (1997) investigated and discovered associations between the five traits and romantic attachment dimensions. The current study aims to replicate these findings in relation to attachment at work. Specifically, it is expected that: H2a: Neuroticism will be significantly negatively correlated with 'secure' attachment style at work. H2b: Extraversion will be significantly positively correlated with 'secure' attachment style at work. H2c: Agreeableness also will be significantly positively correlated with 'secure' attachment at work. Although no specific predictions are stated for the other two personality traits (Openness to Experience and Conscientiousness) these, too, will be tested in the analyses.

The third hypothesis is concerned with the relationship between Trait Emotional Intelligence (TEI) and AAW scores. Trait EI, as distinguished from information-processing EI, is concerned with cross-situational consistencies in behaviour, is embedded within the personality framework, and is assessed utilising validated self-report inventories that measure typical behaviour (Petrides & Furnham, 2000). High trait EI individuals are considered to have abilities, such as 'reading' others' facial expressions,

that may be advantageous to healthy socio-psychological functioning (Petrides & Furnham, 2003). Within the adult attachment literature, a relationship between emotional intelligence and attachment security has been hypothesised, and some evidence in support of this relationship has been found (Kafetsios, 2004), as reviewed in Chapter 2 of this thesis. Within the management development arena, there is burgeoning interest in EI as a surrogate measure of competency in interpersonal relationships. H3: Trait EI will be positively and significantly related to 'secure' attachment at work.

Within the field of organisational psychology there are many other psychological constructs that could usefully be examined to determine their relationship with attachment at work. The several other self-report scales included in this study were selected specifically because a review of the attachment literature suggested that the constructs these scales were designed to assess would be particularly likely to show a strong relationship with attachment, if the latter is indeed in operation in the workplace. In addition, these constructs had been identified as of particular interest to the 'gatekeeper' of the organisation for which this survey was originally designed.

H4: There will be significant correlations between AAW factors and three short, self-report scales designed to assess, respectively, Self esteem, Organisational Commitment, and Trust in People. Specifically, it is expected that H4a: Self esteem will be positively related to 'secure' attachment rather than 'insecure' attachment style at work. H4b: Organisational Commitment also will be positively linked to 'secure' attachment, rather than to 'insecure' attachment style at work. H4c: Trust in People will be significantly and positively correlated with 'secure' attachment, and/or significantly and negatively correlated with 'insecure' attachment style at work.

Finally, demographic variables will also be examined with regard to AAW factors. Although no specific hypotheses are stated, here, it will be of interest to explore the relationship between work attachment style-related factors and demographic variables such as gender, age, and number of children.

3.3 Method

Participants. The sample comprised 117 participants (62 females and 55 males) from various US, Canadian, and British organisations. Respondents ranged from 19 to 83 years of age, with an arithmetic mean of 44.1 (SD = 13.21) years. For purposes of this research, participants were volunteers, with one exception, described below. All participating organisations were guaranteed anonymity; it is worth noting that the sample was drawn from all three sectors: proprietary; public; and not-for-profit organisations.

Procedure. In the main, an individual known to the researcher, within each organisation, was approached with the request of assisting in this research by distributing questionnaires to colleagues. Each person who agreed to serve as an organisational point of contact in this way estimated how many volunteers might be personally contacted to complete questionnaires within their respective organisation, and the researcher dispatched that number of questionnaires for distribution. Each questionnaire was accompanied by a cover letter that explained its purpose as part of an academic study, ensured anonymity of individuals' responses, and offered to provide a summary of aggregate findings, via e-mail, to any respondent so requesting. Questionnaires were numbered to permit identification of organisation but not of individual respondent. Questionnaires were completed anonymously and returned, in pre-addressed sealed

envelopes, to the researcher. The response rate was high, ranging from 60% to 100% across organisations approached in this way.

In addition, individuals within one company where the researcher was providing organisational consultancy services completed the questionnaire as part of a consulting assignment. These individuals were members of an intact work group. In addition to completing the questionnaire, in this instance treated as confidential rather than anonymous, each of these individuals participated in a confidential Adult Attachment Interview (AAI, George et al, 1996), and also completed another management development questionnaire, a form of '360-degree' feedback. In accordance with the terms of the consulting contract, each member of this group then received individual feedback, and a summary of their aggregate findings was offered to the group as a whole.

Measures. Adult Attachment in the Workplace (AAW). This was an 18-item inventory constructed as a preliminary scale for the purpose of assessing adult attachment style, or orientation, in the workplace. All items were adapted from Collins and Read (1990; see Table 1.3).

Personality. Personality was assessed utilising the NEO FF-I (Costa & McCrae, 1992). This inventory represents the short version of the well-established NEO-PI-R and assesses the Big Five personality domains: Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Items consist of questions about typical behaviours or reactions, which are answered on a five-point Likert scale. Responses range from "strongly disagree" to "strongly agree." Over the past decade, a substantial and growing amount of empirical literature has provided evidence for the validity and reliability of this inventory (e.g., Costa & McCrae, 1992; Furnham, 1996;

Matthews, 1997; Matthews & Deary, 1998; McCrae & Costa, 1997; Mount & Barrick, 1995).

Trait Emotional Intelligence. A 30-item inventory, the *Trait Emotional Intelligence Questionnaire (TEIQ)* was employed to assess participants' trait emotional intelligence (EI). It is based on the full form of the TEIQ (Petrides, 2001; Petrides & Furnham, 2003). Items consist of self-report statements about one's tendency to behave or react in an emotionally intelligent manner and are responded to on a 7-point Likert scale (e.g., "Generally, I find it difficult to know exactly what emotion I'm feeling" (R); "I'm usually able to find ways to control my emotions when I want to"). The TEIQ has been constructed with the aim of providing comprehensive coverage of the trait EI domain.

Organisational Commitment. This 9-item self-report measure (Cook & Wall, 1980), comprising statements regarding respondents' Identification and Involvement with, and Commitment to their employing organisation, such as "I feel myself to be part of the organization," "In my work I like to feel I am making some effort, not just for myself but for the organization as well," and "I sometimes feel like leaving this employment for good" (reversed). Responses are given on a 7-point scale ranging from "disagree" to "agree". Details about the scale can be found in Cook, Hepworth, Wall, and Warr, Eds., 1981. For the present sample, the reliability of the scale was $\alpha = .84$.

Self esteem. This self-report inventory was adapted from Rosenberg's (1965) *Self esteem Scale*, and comprises 10 statements such as "All in all, I am inclined to feel that I am a failure" (reversed), to which participants responded on a 7-point scale ("disagree" to "agree"). Further details about this scale appear in Robinson et al, eds. (1991). The reliability of the scale in the present sample was $\alpha = .84$.

Trust in People. This self-report questionnaire was extracted from a longer *Faith in People Scale* (Rosenberg, 1957), to obtain a quick assessment of individuals' likelihood or tendency to trust others. The scale is composed of 3 items, including "If you don't watch yourself, people will take advantage of you," that are responded to on a 7-point Likert scale. The reliability of the scale in the present sample was $\alpha = .80$.

3.4 Results

A total of 18 items of the AAW were subjected to data reduction. The first factor analyses revealed that the original solution reported in Collins and Read (1990) was not replicated in the present sample, with factors accounting for only 32.8% of the variance and several items' cross-loading. Rotation (both Varimax and Oblimin with Kaiser Normalisation) was performed on the data but made little difference. An exploratory (Principal Components) analysis was then carried out and the data were reduced to a two-factor solution that accounted for approximately 50% of the variance. Extraction of the two factors was based on the Eigenvalues and the results of a scree test. Direct Oblimin rotation with Kaiser Normalisation was performed on the data to obtain a clearer solution of two factors.

Factors were labelled "Insecure Attachment at Work" (IAW), which accounted for 37% of the variance, and "Secure/Autonomous Attachment at Work" (SAAW), which accounted for 13% of the variance. Factor scoring was computed via simple addition. The reliabilities were $\alpha = .76$ for IAW and $\alpha = .74$ for SAAW. The correlation between IAW and SAAW was $r = -.29$, $p < .01$. Items and factor loadings are presented in Table 3.1.

Table 3.1

Factor loadings of the work adaptation of the Adult Attachment inventory (AAW)

	<i>Factor</i>	
	1	2
<i>Insecure/Anxious Attachment (IAW)</i>		
11) I often worry that people would not want to stay in my work team.	.82	-.09
5) I often worry that works colleagues do not trust me.	.79	-.02
13) Work colleagues are sometimes put off by my desire to be on their wavelength.	.79	-.18
17) Often, work colleagues want me to be more open than I am comfortable being.	.74	-.03
10) I get nervous when anyone at work confides too much.	.72	-.01
18) I often feel that I am on my own in this company.	.71	.04
4) Top management is never there when you need them.	.67	-.08
16) I find it difficult, in the workplace, to trust others completely.	.62	-.52
6) I find work colleagues reluctant to be as open as I would like.	.59	.01
<i>Secure/Autonomous Attachment (SAAW)</i>		
15) I can count on work colleagues to support me when I need them.	.02	.75
7) I am comfortable depending upon others at work.	.03	.75
2) I do not often worry about being left in the lurch at work.	-.10	.61
1) I find it relatively easy to get close to others at work.	-.05	.60
8) I do not often worry about someone confiding too much in me at work.	-.18	.53
14) I am comfortable having others depend on me at work.	.02	.46
3) I find it difficult to allow myself to depend on others at work. (R)	.08	-.44
9) I am somewhat uncomfortable depending upon others at work. (R)	-.20	-.41
12) I want to be completely in tune with my boss.	-.03	.40
Eigenvalue before rotation	6.58	3.32
Percentage of variance accounted for	36.9%	13.2%
Reliability of the scale (Cronbach's α)	.76	.74

Note. $N = 117$. (R) = reversed scores.

This solution represents a condensed form of the predicted result. The structure of the Adult Attachment at Work (AAW) measure conserved five of the six ‘anxious’ items loading onto a first factor, along with four of the six ‘avoidant’ items. All of the ‘secure’ items loaded onto a second factor. The remaining ‘anxious’ item and the two remaining ‘avoidant’ items loaded onto the second factor, but with considerably weaker associations than were found for the ‘secure’ items.

This outcome only partly conforms to the H1a prediction that factor analysis would reveal three distinct factors corresponding to Hazan and Shaver’s (1987) ‘secure,’ ‘avoidant’ and ‘anxious/ambivalent’ attachment styles. However, the two factors discovered in this analysis do tend to map onto the broad distinction between secure and insecure attachment styles within which Hazan and Shaver’s (1987) attachment styles fall. Moreover, results showed that 53.4% of the sample scored below average on the (insecure) IAW factor, whilst 56.9% scored above average on the (secure) SAAW factor. These findings are in line with the typical distribution of overall insecure and secure attachment classifications in other studies and meta-studies, and therefore confirm H1b. Thus, overall, findings confirmed the H1 set of hypotheses.

A series of bivariate correlations were then computed on the data to test the other hypotheses of this study. Pearson’s r coefficients and significance levels are presented in Table 3.2.

Table 3.2

Pearson's Correlation coefficients for the relationship of IAW and SAAW with Big Five personality traits, TEIQ, Commitment, Self esteem, Trust and demographic variables

	IAW		SAAW		
	α		Partial		Partial
Neuroticism	.87	.02	.06	-.28**	-.29**
Extraversion	.81	.03	.06	.15	.16
Openness	.83	.24**	.32**	.07	.02
Agreeableness	.88	-.03	.02	.13	.10
Conscientiousness	.83	.10	.06	.10	.04
TEIQ	.86	.12	.13	.25**	.29**
Commitment	.84	-.08	-.06	.34**	.26**
Self esteem	.84	-.59**	-.60**	.02	.10
Trust	.80	-.19*	-.18*	.20*	.24
N of children		.09		.32**	
Age		-.05		.27**	
Gender		.24*		.15	

Note. $N = 117$. Gender coded 1 = females, 2 = males. * $p < .05$. ** $p < .01$. Partial = partial correlation, controlling for number of children, age, and gender.

There were significant associations between AAW factors (IAW and SAAW) and two of the Big Five personality traits. Specifically, Neuroticism was found to be negatively and significantly correlated with SAAW. Thus higher Neuroticism scores were associated with lower secure/autonomous attachment at work, and vice versa. On the other hand, Openness to Experience was shown to be significantly and positively correlated with IAW scores. Accordingly, higher Openness scores were related to higher insecure attachment at work, and vice versa. Although it had been predicted that Extraversion and Agreeableness scores would also be significantly correlated with AAW scores, correlations do not confirm these hypotheses. Thus, H2a was confirmed; H2b and H2c were not; and a positive correlation was revealed that had not been predicted between Openness to Experience and insecure attachment at work.

With regard to the relationship between AAW scores and trait EI (as stated in H3), correlations confirmed a significant and positive association between these two scales. Specifically, it was found that higher TEI was related to higher SAAW (and vice-versa). This supported H3.

With regard to the relationship between the AAW and the various self-report scales (assessments of organisational commitment, self esteem, and trust), there were several significant associations, all of which confirmed initial hypotheses. Specifically, Organisation Commitment was positively and significantly correlated with SAAW (i.e., greater commitment was associated with higher 'secure/autonomous' attachment orientation). This confirmed H4a. Self Esteem was negatively and significantly (as well as highly) correlated with IAW (i.e., lower Self esteem was significantly associated with higher 'insecure' attachment orientation). This confirmed H4b. Trust was significantly correlated with both IAW (negatively) and SAAW (positively). In other words, higher trust scores were associated with lower 'insecure' attachment scores and with higher 'secure/autonomous' attachment scores. Thus H4c was particularly clearly confirmed.

Finally, correlations were also performed on the data to examine the relationship between the AAW and several demographic variables, gender, age, and number of children. Gender was found to be significantly correlated with attachment; specifically, males were more likely to score higher on IAW than were females. Age was significantly and positively correlated with SAAW, indicating that the older the respondent, the higher his or her SAAW score would tend to be. Finally, number of children was also significantly and positively correlated with SAAW; the more children a respondent had, the higher his or her SAAW score would tend to be. Although no specific hypotheses

were stated with regard to demographic variables, these results are of interest and will be discussed in the section that follows. When demographic variables were controlled for, the correlations between the two attachment factors and other variables remained practically unchanged (see Table 3.2, sub-columns labelled 'P').

Table 3.3
Multiple Regressions testing the Big Five personality traits, TEIQ, Commitment, Self esteem, Trust and demographic variables as predictors of IAW and SAAW

	<u>IAW</u>				<u>SAAW</u>			
	β	SE	st. β	t	β	SE	st. β	t
Commitment	-.03	.02	-.11	1.02	.17	.02	.25	2.28*
Self esteem	-.68	.03	-.70	7.85**	-.02	.04	-.07	.65
Trust	-1.03	.03	-.16	1.38**	.11	.05	.09	1.50
Neuroticism	.26	.05	.15	1.55	.11	.06	-.26	2.13*
Extraversion	-.09	.06	-.04	.43	-.01	.03	-.04	.30
Openness	.09	.03	.04	.42	-.09	.04	-.13	.99
Agreeableness	.19	.08	.09	.83	-.10	.05	-.14	1.08
Conscientiousness	.11	.05	.06	.63	-.05	.06	-.09	.73
TEIQ	.14	.04	.21	1.91	.53	.07	.24	1.83
N of children	.87	.05	.10	.92	.39	.04	.13	.97
Age	-.23	.03	-.22	2.05*	.07	.05	.20	1.56
Gender	.10	.05	.01	.04	.53	.03	.06	.47
	7.24**				2.79**			
	.46				.20			

Note. $N = 88-117$. Gender coded 1 = females, 2 = males. * $p < .05$. ** $p < .01$.

In addition to the correlation analyses, multiple regressions were performed on the data to test the predictability of IAW and SAAW by the three short measures (trust, organisational commitment, and self esteem), personality traits (Big Five) and trait emotional intelligence, and demographic variables (age, gender, and number of children). In the first regression, the dependent variable was IAW and the predictors were the three

short scales, individual differences in personality and trait emotional intelligence, and demographic variables. As can be seen in Table 3.3, self esteem, trust and age were all negatively related to IAW, and 46% of the variance in IAW was accounted for by all variables. In a second regression, the same predictors were entered but the criterion was now SAAW. Table 3.3 shows that 20% of the variance in SAAW was explained by all variables, with commitment and Neuroticism as significant predictors.

3.5 Discussion

Taken together, the results of the factor analysis are important in two respects. Firstly, although just two rather than the three predicted factors were found, both the loading of questionnaire items—with all of the ‘secure’ items loading onto one factor, and most of the ‘insecure’ factors loading onto the other—and the sample’s scores on both factors—in line with the typical distribution of ‘secure’ and overall ‘insecure’ classifications in other attachment research (e.g., van IJzendoorn & Bakermans-Kranenburg, 1996)—give credence to this adapted inventory’s construct validity as a basic measure of attachment at work. The results show two orthogonal factors, indicating two distinct, related dimensions of attachment, rather than opposite ends of a single dimension. Recall that the AAW was adapted from an instrument designed to assess attachment styles in romantic relationships (Collins & Read, 1990). It may be that the adapted inventory’s failure to differentiate between types of insecure attachment reflects the need for a more detailed understanding of *how* (not whether) these two insecure attachment orientations might be manifest in the work context, and in particular how their manifestations might differ, in order to improve their measurement. In this vein it is worth noting Hazan and Shaver’s (1990) finding that anxious/ambivalent respondents

tended to report having a relatively lower level of income than either secure or avoidant respondents. Further modification of the 'insecure' items in the AAW inventory may be required, to produce a more sensitive measure of insecure attachment styles at work. This study's findings are nevertheless encouraging, particularly when one considers that research utilising the original romantic attachment styles questionnaire (Collins & Read, 1990) from which the AAW was adapted reported results that, compared with the results reported here, were less directly aligned with the main attachment categories from which both inventories derive (Hazan & Shaver, 1987).

Secondly, distribution of the sample's scores on each of the two factors, when compared with counterpart distribution of overall insecure and secure attachment classifications in mainstream attachment research, tends to confirm the expectation that the distribution of the main attachment orientations amongst workers, in general, is consistent with that of the general population. Apropos, it is worth noting that Hazan and Shaver, in their 'Love and Work' study (1990), found that their respondents' self-classifications fell into a typical distribution pattern across their three main romantic attachment categories (secure; avoidant; anxious/ambivalent). However, only 2 of 16 individual work items yielding significant differences among the three attachment groups significantly differentiated between the two types of insecure attachment. To address this, hierarchical discriminant-function analyses were performed to assess predictability of membership in the three attachment categories from work variables; findings were in keeping with what attachment theory would predict (Hazan & Shaver, *ibid*). Those findings might prove of use in development of a more fine-grained measure of attachment at work.

This study attempted a conceptual replication, in the context of work relationships, of earlier research that revealed associations between the Big Five Personality Traits (Costa & McCrae, 1992) and attachment style in the context of romantic relationships (e.g., Shaver & Brennan, 1992). The negative correlation between Neuroticism and secure/autonomous attachment at work found here did indeed align with earlier research findings; however, positive correlations that had been found between both Extraversion and Agreeableness on the one hand, and secure romantic attachment on the other, did not recur in the present research. Moreover, an unpredicted positive correlation was discovered between Openness to Experience and insecure attachment at work. The discrepancies between the two sets of findings may be attributable to measurement error, to contextual or construct differences (between romantic attachment and attachment at work), or to some combination of these.

The mainstream attachment literature (e.g., Cassidy & Shaver, eds., 1999) tends to imply or even state that, generally speaking, a secure/autonomous attachment orientation is preferable to an insecure one. This view is not surprising, particularly given that attachment theory is rooted in Bowlby's early investigations into the detrimental impact on children's mental health of early maternal deprivation. The significant and positive correlations revealed in the present study between secure/autonomous attachment at work and Emotional Intelligence, Organisational Commitment, Self esteem, and Trust in People are all as predicted, and all serve as further endorsements of secure/autonomous attachment orientation. From an application perspective, however, perhaps the most interesting of the present study's findings is that linking insecure attachment with Openness. Since the latter trait may well have practical benefits in the conduct of certain

kinds of work roles, this particular correlation strikes a useful cautionary note about the relative value to the organisation of different attachment styles. This finding also spurs interest in refining the AAW inventory, to determine whether one form of insecure attachment at work is, more than the other, linked to this particular personality trait.

As previously mentioned, van IJzendoorn and Bakermans-Kranenburg (1996) conducted a meta-analysis of AAI studies with non-clinical mothers and fathers; it revealed highly similar attachment classification distributions across these two sub-groups. Hazan and Shaver (1990) likewise reported finding few sex differences between the men and women in their study; none of these were reported as being attachment style-related. By contrast, in the present study, gender was found to be significantly correlated with attachment orientation; specifically, males in this sample were more likely than females to score higher on insecure attachment at work. There are several possible reasons for these discrepant findings. Sampling differences may be an explanatory factor. For example, because the AAI meta-analysis utilised samples comprised of parental partners, as the researchers noted, analysis revealed that secure men were disproportionately likely to be the partners of secure women (van IJzendoorn & Bakermans-Kranenburg, 1996). The work-based sampling procedure for the present study is unlikely to have resulted in the inclusion of any parental partners. Alternatively, construct and/or instrumentation differences may have contributed to these discrepant findings. Differences in the nature of the jobs held by the men and women in this sample is also a likely explainer.

Partial correlations revealed that, with one exception, the relationships found in the present study between AAW and gender, age, and number of children, respectively,

are independent of one another. The exception is that, when controlled for number of children, age is not significantly correlated with attachment. Perhaps secure attachment orientation predisposes one toward having children; perhaps parenthood evokes secure attachment. Either way, the link between secure attachment orientation at work and the presence of children at home constitutes what might be characterised as compelling support for the notion that attachment—assessed, here, in the work context—is, indeed, one construct that spans both contexts (work and family).

The study that follows aims to continue the process of validating a new self-report measure of adult attachment at work (AAW); this includes an assessment of its concurrent validity in relation to romantic attachment, and an investigation of correlates of relevance in the workplace.

Study 2

3.6 Introduction

The expanding field of Attachment (Cassidy & Shaver, eds., 1999) and, in particular, Adult Attachment (Rholes, & Simpson, eds., 2004) has begun to consider the relationship between attachment and work (e.g., Hazan & Shaver, 1990; Elliot & Reis, 2003). The published research on attachment at work cited above has entailed assessment of attachment style in a non-work context and has proposed conceptualising work as if it represented the exploratory behavioural system with which the attachment behavioural system interacts. For example, Hazan and Shaver (*ibid*) found that individuals who were secure in their outside of work attachment orientation were more satisfied than those with either an anxious or an avoidant attachment orientation with the recognition they received at work, and with their co-workers, and had fewer work-related worries. A few other studies have considered workers' attachment orientations, particularly in relation to work-related stress and social support (e.g., Schirmer & Lopez, 2001), and have suggested that workers develop one of three specific relational styles (overdependent, counterdependent, self-reliant), for example to deal with anxiety at work, that correspond to anxious, avoidant, and secure attachment orientations (*ibid*, p. 20).

Study 1 entailed developing a tailored measure of attachment for use in the work context. Drawing conceptually from the "state of mind" literature (e.g., Main, 1998) and methodologically from the adult "romantic attachment" tradition (e.g., Hazan & Shaver, 1987), by applying a measure associated with this latter tradition (Collins & Read, 1990, adapted), this first study investigated how attachment orientation, or style, may affect work relationships in general, and management style in particular, across a wide array of

organisational settings (see Study 1). As noted at the end of Chapter 2, the initial plan was for this first application of the new attachment at work measure to run in conjunction with a pilot work application of the AAI (George et al, 1996), thereby serving as a preliminary investigation of concurrent validity. However, this plan was unable to be implemented. As a result, Study 1 relied upon an unvalidated adaptation of a romantic attachment questionnaire to assess attachment style at work. Moreover, the pilot AAI application, which was conducted, demonstrated the difficulty of successfully employing this methodology in the workplace; it was time consuming, expensive to administer, and potentially destabilising for busy managers who may not previously have been self-reflective about their formative years. The present study was therefore designed in part to validate the adapted questionnaire measure of attachment at work (the AAW) using the original self-report measure of romantic attachment (the AAS; Collins & Read, 1990) from which it had been developed.

In addition, this study was designed with a view toward investigating the attachment behavioural system as it may interact with the exploratory behavioural system, in the workplace. Both Hazan and Shaver (1990) and Elliot and Reis (2003), in their studies of attachment and work, noted that the exploratory behavioural system is far less well developed, conceptually, than the attachment behavioural system. Study 1's unexpected findings concerning the relationship between attachment and Openness underscored the potential value of operationalising and investigating the exploratory behavioural system as it might be manifest in the workplace (see Study 1). Limitations of the operationalisations of exploration utilised by the authors cited above are considered in the literature review chapter of this thesis (see Chapter 2). Instead, as discussed therein

and further in the description of measures, below, for the present study, trait emotional intelligence and typical intellectual engagement have been proposed to serve, together, as a surrogate for exploratory behaviour at work.

In summary, this study focuses on a) reformulating and retesting a set of hypotheses that were only partly confirmed in the research reported in the previous chapter, concerned with the factor structure of the attachment measure per se, and b) retesting a second set of hypotheses, also only partly confirmed in the earlier study, concerned with associations between attachment and specific personality constructs. Finally, this study c) introduces a pair of hypotheses aimed at contributing to recent efforts in the attachment literature to understand the relationship between attachment and exploration in adulthood (e.g., Elliot & Reis, 2003; Green & Campbell, 2000) as well as, in part, replicating findings from Study 1.

Specifically, four major hypotheses, the first two of which consist of sets of hypotheses, have been formulated regarding the Adult Attachment at Work (AAW) inventory used in this study, and its relationship with other established constructs. As previously, the present study's first set of hypotheses concerns whether and to what extent findings support the premise that attachment is indeed present and active in the workplace. The second set are concerned with the relationship between the AAW inventory and a well-established personality measure of the Big Five personality traits, the NEO-FFI (Costa & McCrae, 1992). The third hypothesis aims to replicate Study 1 findings concerning the relationship between the AAW inventory and trait emotional intelligence (see Study 1). The fourth hypothesis is concerned with the relationship between the AAW inventory and a construct that measures preference and tendency to

engage in intellectual activities, TIE (Goff, M. & Ackerman, 1992). Findings in relation to these last two will be considered together as these may bear on the relationship between attachment and exploration at work.

As in the previous study, H1 is here concerned with whether the AAW inventory actually measures attachment at work. However, in the previous study a set of hypotheses were framed to adhere to the three categories of romantic attachment that Hazan and Shaver (1987) had derived from Ainsworth's three main infant attachment classifications, one for secure and two for different types of insecure attachment (Ainsworth et al, 1978), and to predict a distribution of attachment styles, across these three, that was comparable to the distribution found in mainstream attachment research using non-clinical samples. Collins and Read (1990) had converted the Hazan and Shaver (1987) categorical measure into a continuous measure, permitting factor analysis, and for the AAW some items in this measure were adapted to suit the work context. So, specifically, in the previous study it was hypothesised that factor analysis would reveal three distinct factors directly corresponding to Hazan and Shaver's (1987) 'secure,' 'avoidant' and 'anxious/ambivalent' attachment styles. Study 1 also hypothesised that that survey's sample results would show frequencies, across the three predicted factors, that were comparable to a typical distribution of major classifications in mainstream attachment research. As reported in Study 1, Principal Component Analyses of that study's data found a two factor solution that tended to map onto the broad distinction between secure and insecure attachment styles, and analyses showed that 53.4% of the sample scored below average on the (insecure) IAW factor, whilst 56.9% scored above average on the (secure) SAAW factor. These findings were in line with the typical

distribution of overall insecure and secure attachment classifications in other studies and meta-analyses in the mainstream attachment literature (e.g., van IJzendoorn & Bakermans-Kranenburg, 1996).

Thus, overall, Study 1's first set of hypotheses were considered to have been confirmed. As no alterations were made to the AAW measure for Study 2, it is hypothesised that the earlier study's two factor solution will be replicated here, with a frequency distribution, between IAW and SAAW, that again conforms to the distribution of insecure and secure attachment styles in the mainstream attachment literature. Specifically, H1a: Principal components analysis will reveal two distinct factors that directly correspond to the two factors identified as IAW and SAAW in the previous study. H1b: this survey's sample results will show frequencies across the two factors predicted in H1a that are comparable to a typical distribution of insecure and secure attachment styles or orientations in mainstream attachment research.

As in the first AAW study, the second set of hypotheses, H2, is concerned with the relationship between the Big Five Personality Traits (Costa & McCrae, 1992) and AAW scores. The earlier study had aimed to replicate, in relation to AAW factors, the findings of earlier research, reported in Crowell et al (1999), of associations between the five traits and romantic attachment dimensions. Study 1 findings in relation to attachment at work only partly conformed to these earlier findings. Actual Study 1 findings were that there were significant associations between the AAW factors (IAW and SAAW) and two of the Big Five personality traits. Specifically, Neuroticism was found to be negatively and significantly correlated with SAAW. Thus, higher Neuroticism scores were associated with lower secure/autonomous attachment at work, and vice versa, as

predicted. On the other hand, Openness to Experience was shown to be significantly and positively correlated with IAW scores. Thus, higher Openness scores were related to higher insecure attachment at work, and vice versa. This finding had not been predicted and, from the perspective of the mainstream attachment literature, was counterintuitive.

Study 1 findings did not confirm that both Extraversion and Agreeableness would be significantly positively correlated with SAAW; however, in both instances findings were in a positive direction and approached significance. Therefore it was deemed worthwhile to aim once again to replicate, in relation to AAW factors, the findings of earlier romantic attachment research concerning associations with the Big Five personality traits (Shaver & Brennan, 1992). As the present study included a measure of romantic attachment, Adult Attachment Styles, (AAS; Collins & Read, 1990), Study 2 findings could also be examined in terms of the Big Five traits' associations with AAS results as well as in relation to AAW factors. Thus, specifically, it is expected that: H2a: Neuroticism will be significantly positively correlated with IAW (anxious/ambivalent AAS). H2b: Extraversion will be significantly positively correlated with SAAW (secure AAS). H2c: Agreeableness also will be significantly positively correlated with SAAW (secure AAS). Also, as in Study 1, although no specific predictions are stated for the other two personality traits (Openness to Experience and Conscientiousness) these, too, will be tested in the analyses.

The third hypothesis once again concerns the relationship between Trait Emotional Intelligence (TEI) and AAW scores. As noted in Study 1, trait EI, as distinguished from information-processing EI, is concerned with cross-situational consistencies in behaviour, is embedded within the personality framework, and is

assessed utilising validated self-report inventories that measure typical behaviour (Petrides & Furnham, 2000). High trait EI individuals are considered to have abilities, such as ‘reading’ others’ facial expressions, that may be advantageous to healthy socio-psychological functioning (Petrides & Furnham, 2003). Within the management development arena, there is burgeoning interest in EI as a surrogate measure of competency in interpersonal relationships. Study 1 correlations confirmed a significant and positive association between AAW scores and trait EI, such that higher trait EI was related to higher SAAW (and vice-versa). Study 2 aims to replicate this, so H3: Trait EI will be positively and significantly related to SAAW.

As mentioned in the discussion of H2 above, Study 1 found an unpredicted positive correlation between IAW and Openness (Dimension 5 of the Big Five constructs; Costa & McCrae, 1992). There has been more disagreement about this Big Five construct than any of the others (Mount & Barrick, 1995). It has been separately characterised as a measure of inquiring intellect; independent mindedness; culture; artistic sensitivity; autonomy; imaginativeness; and wisdom, to name a few (ibid, pp. 161-3). Costa and McCrae, noting that the traits of imagination, curiosity, and originality are commonly associated with it, have interpreted the construct as Openness to Experience (ibid, p.166).

The Study 1 finding of a positive correlation between IAW and Openness may well have been a one-off result due to, say, measurement error, but in any case was sufficiently counterintuitive to give pause. Particularly recalling the conceptualisation of work as the adult’s form of exploration (Hazan & Shaver, 1990), and the view, elsewhere in the attachment literature, of insecure attachment as “nonoptimal” (e.g., Elliot & Reis, 2003), one might have predicted a negative association, if any, between these two factors.

(Within the romantic attachment literature, Shaver and Brennan (1992) provide some support for this; in an investigation of romantic attachment styles and the Big Five traits, they found a significant negative correlation between the Openness Feeling subscale and the insecure-avoidant attachment scale.) In Study 2, H2 provides the means of re-examining this relationship to replicate the Study 1 finding concerning the relationship between attachment security and Openness—or not.

This particular line of inquiry is here supplemented by the inclusion of a hypothesis to test for associations between AAW and a measure that taps into a construct related to both Openness and Conscientiousness. Research has indicated that Typical Intellectual Engagement (TIE) is highly correlated ($r = .6$) with both Openness and Conscientiousness (Goff & Ackerman, 1992; Ackerman & Goff, 1994). TIE is regarded as a reliable indicator of people's typical as opposed to maximal intelligence, also characterised as a measure of "crystallised intelligence" (Chamorro-Premuzic & Furnham, 2004). Hazan and Shaver (1990) and Elliot and Reid (2003) both noted the need for a strengthened conceptualisation of the exploratory behavioural system, in order for that aspect of attachment theory to be empirically investigated. In response, Elliot and Reid promoted extant work from the field of achievement (Elliot & Reid, 2003). However, TEIQ and TIE, taken together, could serve as an alternative means of operationalising the exploratory behavioural system. Thus, H4: A significant positive association will be found between TIE and SAAW.

3.7 Method

Participants

A total of 104 participants (57 females and 47 males) took part in this study. Age ranged from 23 to 78 years, with an arithmetic mean of 38.15 (SD = 12.21) years. Participants were volunteers who returned their questionnaires to the researcher through the post, and had the option of remaining completely anonymous, or of including their e-mail addresses for the sole purpose of obtaining feedback about the study. Most were living and working in the UK; some questionnaires were distributed and returned from overseas (US, Israel, Australia, for example).

Measures

Five self-report questionnaire measures were utilised, overall, along with a set of questions designed to obtain socio-demographic information about the participants.

Adult Attachment Scale (AAS; Collins & Read, 1990). This is a continuous measure of romantic attachment constructed from Hazan and Shaver's (1987) original categorical measure of romantic attachment styles. The revised measure retains all of the descriptive statements from the original measure, converting them into a questionnaire that incorporates a Likert scale in which responses range from *not at all characteristic* to *very characteristic*. Scoring of the AAS questionnaire items for this study was based on the original predicted solution as inferred from the history of this instrument's construction from Hazan and Shaver's (1987) categorical measure of romantic attachment. (See Study 1 for details.) Thus, a three-factor structure was obtained, namely Secure, Avoidant, and Anxious factors. The Secure factor was computed through simple addition (after re-coding for reversed items) of: *I am comfortable depending on*

others; I know that others will be there when I need them; I do not often worry about being abandoned; I find it relatively easy to get close to others; and I am comfortable having others depend on me. Cronbach's Alpha was .74, indicating good internal reliability. The Avoidant factor was likewise computed through simple addition (after re-coding for reversed items) of: *I find it difficult to allow myself to depend on others; People are never there when you need them; I find it difficult to trust others completely; I am somewhat uncomfortable being close to others; I am nervous when anyone gets too close; and Often, love partners want me to be more intimate than I feel comfortable being.* Cronbach's Alpha for this factor was .80, indicating high internal reliability. Finally, the Anxious factor was computed through simple addition (after re-coding reversed items) of: *I am not sure that I can always depend on others to be there when I need them; I often worry that my partner does not really love me; I find others are reluctant to get as close as I would like; I often worry my partner will not want to stay with me; I want to merge completely with another person; and My desire to merge sometimes scares people away,* with a Cronbach's Alpha of .78, again indicating good reliability.

Adult Attachment at Work was measured using the Attachment at Work questionnaire (AAW), as in Study 1.

Personality. The *Big Five* personality traits were assessed utilising the Neuroticism-Extraversion-Openness Five Factor inventory (NEO-FFI; Costa & McCrae, 1992) as in Study 1.

Trait Emotional Intelligence was assessed using the Trait Emotional Intelligence Questionnaire (TEIQ), as in Study 1.

Typical Intellectual Engagement (TIE). This construct was assessed through the 59-item inventory developed by Goff and Ackerman (1992). Participants respond on a 6 point Likert scale and high scores represent their desire and tendency to engage in intellectual activities (e.g., arts, philosophical discussions, problem solving). TIE conceptualises intelligence in a typical rather than maximal way; this is therefore a borderline construct at the crossroads of personality and intelligence (Chamorro-Premuzic & Furnham, 2004).

Procedure

Through her professional network, the researcher approached individuals who might be willing to participate in this study, and/or to function as volunteer recruiters (by locating other potential participants and distributing survey questionnaires to them). In the initial contact and again in the cover note that accompanied the survey, it was explained that this study required participants with experience of both working in an organisation and being in a romantic or love relationship such as, for example, a marriage. Survey questionnaires were distributed during October, November, and early December 2004. They were designed to be anonymous (even individuals wishing to receive feedback could, if they wished, create an unidentifiable e-mail address for the purpose), and were returned to the researcher through the post via pre-addressed return envelopes. Overall, 285 questionnaires were distributed, for 105 returns (one of which was blank) by mid-December. Of the 104 completed questionnaires, in four instances the romantic attachment measure was left blank. Thus, the validity analyses reported herein were conducted with a sample of 100. A further 8 questionnaires were received after the initial

analyses had been completed. Overall, the response rate was just under 40%, about half of the Study 1 rate of response.

3.8 Results

Romantic attachment and attachment at work:

Table 3.4 depicts the factor structure of the measure adapted from Collins and Read's (1990) AAS measure to assess adult attachment at work (AAW). As shown, two major factors were identified, namely IAW and SAAW (i.e., insecure attachment at work, and secure-autonomous attachment at work; these labels were given in accordance with the results of Study 1, these major factors having replicated the AAW structure found in that first study). Principal Component Analyses was used for the factor extraction, and yielded an almost identical solution to that in Study 1. Each factor consisted of the same 9 items as in the earlier study; all 18 of the questionnaire items were thus again associated with one factor or the other.

The structure of the AAW measure conserved four of the six 'anxious' items loading onto a first factor, along with five of the six 'avoidant' items. All of the 'secure' items loaded onto a second factor. The remaining two 'anxious' items and the remaining 'avoidant' item loaded onto the second factor, though with somewhat weaker associations than were found for the 'secure' items. The two-factor solution accounted for 45.6% of the variance. This extraction was based on both Eigenvalues and the results of a scree test. Direct Oblimin rotation with Kaiser Normalisation was carried out to obtain a clearer solution (since there were no theoretical assumptions of orthogonality, factors were allowed to correlate). Factor scoring was computed via simple addition.

Table 3.4

Factor Loadings of the work adaptation of the Adult Attachment inventory (AAW)

		<i>Factor</i>	
		1	2
<i>Insecure/Anxious Attachment (IAW)</i>			
	<i>M (SD)</i>		
5) I often worry that work colleagues do not trust me.	2.4 (1.5)	.79	-.14
11) I often worry that people would not want to stay in my work team.	2.4 (1.5)	.75	-.11
13) Work colleagues are sometimes put off by my desire to be on their wavelength.	2.5 (1.2)	.72	-.08
16) I find it difficult, in the workplace, to trust others completely.	3.7 (1.5)	.70	-.07
10) I get nervous when anyone at work confides too much.	5.5 (1.5)	.69	-.12
18) I often feel that I am on my own in this company.	2.6 (1.5)	.65	.08
4) Top management is never there when you need them.	3.4 (1.6)	.60	-.00
17) Often, work colleagues want me to be more open than I am comfortable being.	2.8 (1.4)	.53	-.33
6) I find work colleagues reluctant to be as open as I would like.	3.4 (1.5)	.50	.05
<i>Secure/Autonomous Attachment (SAAW)</i>			
	<i>M (SD)</i>		
15) I can count on work colleagues to support me when I need them.	4.9 (1.1)	.08	.69
7) I am comfortable depending upon others at work.	4.6 (1.3)	.06	.68
9) I am somewhat uncomfortable depending upon others at work. (R)	3.3 (1.4)	-.08	-.59
2) I do not often worry about being left in the lurch at work.	5.0 (1.4)	-.02	.55
8) I do not often worry about someone confiding too much in me at work.	5.5 (1.5)	-.10	.49
12) I want to be completely in tune with my boss.	4.0 (1.5)	.09	.48
3) I find it difficult to allow myself to depend on others at work. (R)	4.5 (1.4)	.03	-.43
1) I find it relatively easy to get close to others at work.	5.3 (1.2)	-.18	-.40
14) I am comfortable having others depend on me at work.	5.4 (1.4)	-.04	.39
Eigenvalue before rotation		5.37	3.48
Percentage of variance accounted for		32.7%	12.9%
Reliability of the scale (Cronbach's α)		.79	.74

Note. $N = 104$. (R) = reversed scores.

The reliabilities were $\alpha = .79$ for IAW and $\alpha = .74$ for SAAW. The correlation between IAW and SAAW was $r = -.43$, $p < .01$.

Moreover, results showed that 53% of the sample scored below average on the (insecure) IAW factor, whilst 53.5% scored above average on the (secure) SAAW factor, in line with distribution frequencies in Study 1 and in mainstream attachment research (Cassidy & Shaver, 1999). Thus, as in Study 1, results in the present study reconfirmed H1.

Table 3.5

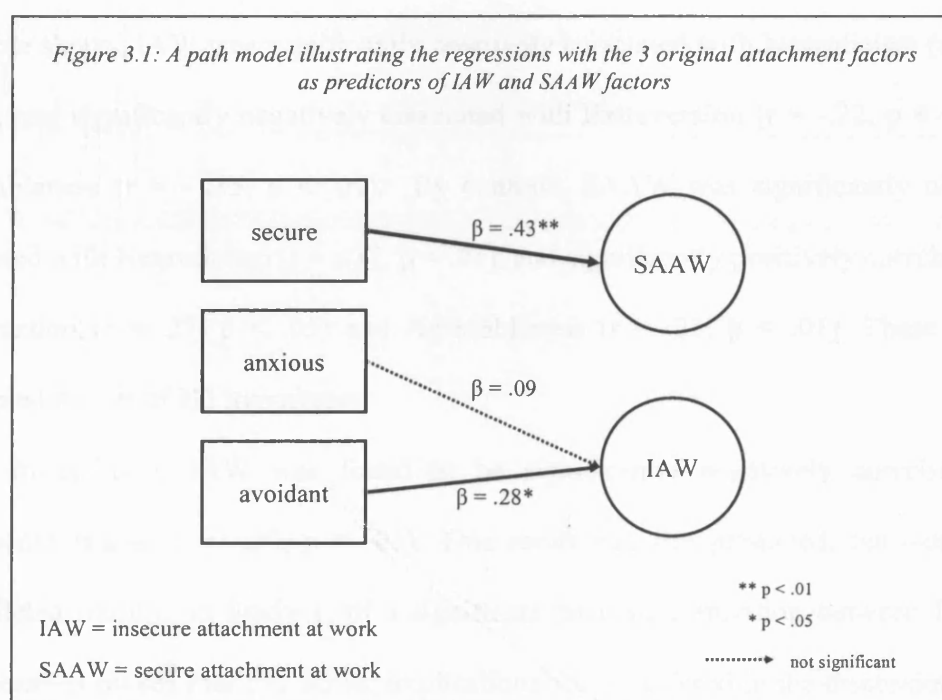
Pearson's Correlation coefficients for the relationship of IAW and SAAW with Secure, Avoidant, and Anxious attachment, Big Five personality traits, TEIQ, TIE, and demographic variables

	<i>Adult Attachment at work</i>		<i>Romantic Attachment</i>		
	IAW	SAAW	Secure	Avoidant	Anxious
IAW			-.39**	.42**	.36**
SAAW			.53**	-.43**	-.37**
Neuroticism	.30**	-.37**	-.37**	.43**	.41**
Extraversion	-.22*	.27**	.25*	-.36**	-.15
Openness	-.17	.10	.05	-.07	.12
Agreeableness	-.35**	.21*	.21*	-.24*	-.03
Conscientiousness	-.20*	.02	.04	-.17	-.11
TIE	-.19	.29**	.22*	-.19**	-.11
TEIQ	-.40**	.56**	.55**	-.65**	-.50**
Health	-.19*	.14	.26*	.15	-.27**
Salary	.00	.04	-.01	.09	.01
Employed	.11	-.05	-.10	-.11	-.07
Education	-.31**	.12	.20*	-.13	-.01
Religion	-.19	.04	.16	-.21*	-.21*
Religion (family)	-.12	-.03	.04	-.05	-.05
Political views	.03	.04	-.12	.09	-.01
N of children	-.03	.04	.16	-.19*	-.20*
Marital status	.07	-.09	-.11	.05	-.01
Age	.06	-.05	-.04	.27**	-.15
Gender	.00	.01	.05	.15	-.13

Note. $N = 104$. Gender coded 1 = females, 2 = males. * $p < .05$. ** $p < .01$.

As Table 3.5 shows, there were significant correlations between the two measures of attachment, Collins and Read's (1990) romantic attachment scale, AAS, and the adaptation of that measure for the workplace, AAW. Specifically, secure attachment

style, the 'secure' romantic attachment factor, was significantly negatively correlated with IAW ($r = -.39, p < .01$) and significantly positively correlated with SAAW ($r = .53, p < .01$). By contrast, avoidant attachment style, one of the 'insecure' romantic attachment factors, was significantly positively correlated with IAW ($r = .42, p < .01$) and significantly negatively correlated with SAAW ($r = -.43, p < .01$); likewise, anxious attachment style, the other 'insecure' romantic attachment factor, was significantly positively correlated with IAW ($r = .36, p < .01$) and significantly negatively correlated with SAAW ($r = -.37, p < .01$).



Next, two multiple regressions were performed on the data to test how much variance in the work adaptation of the attachment inventory could be accounted for by the original scale; thus IAW and SAAW were treated as criterion variables, whilst secure,

avoidant and anxious AAS were tested as predictors. Model 1 showed that romantic attachment scores accounted for 29% of the variance in SAAW ($F(3, 93) = 13.82, p < .01$), and secure AAS was a significant predictor in the model ($\beta = .43, t = 3.84, p < .01$). Model 2 treated IAW as the criterion, and 20% of the variance was accounted for ($F(3, 93) = 8.54, p < .01$); avoidant AAS was a significant predictor in the model ($\beta = .28, t = 2.15, p < .05$). The regressions are graphically depicted in Figure 3.1.

Personality Correlates of AAW and AAS:

Table 3.5 also depicts the personality correlates of attachment, specifically correlations between both of the attachment scales and the Big Five, TIE, and TEIQ. As this table shows, IAW was significantly positively correlated with Neuroticism ($r = .30, p < .01$), and significantly negatively correlated with Extraversion ($r = -.22, p < .01$), and Agreeableness ($r = -.35, p < .01$). By contrast, SAAW was significantly negatively correlated with Neuroticism ($r = -.37, p < .01$), and significantly positively correlated with Extraversion ($r = .27, p < .05$) and Agreeableness ($r = .21, p < .01$). These findings confirmed the set of H2 hypotheses.

In addition, IAW was found to be significantly negatively correlated with Conscientiousness ($r = -.20, p < .05$). This result was not predicted, but—unlike the unpredicted finding, in Study 1, of a significant positive correlation between IAW and Openness—it makes intuitive sense; implications are considered in the discussion section that follows.

IAW was found to be negatively correlated with TEIQ ($r = -.40, p < .01$). Most notably, SAAW was significantly positively related to TEIQ ($r = .56, p < .01$). This latter

correlation indicates that SAAW and TEIQ share more than 25% of variance in common. These results strongly support H3.

The unpredicted finding, in Study 1, of a positive correlation between IAW and Openness to Experience (Factor 5 of the Big Five constructs) was not replicated here; moreover, in this study, SAAW was significantly positively correlated with TIE ($r = .29$, $p < .01$), as predicted, thus confirming H4.

In summary, results with regard to AAW and other personality constructs were all in line with initial predictions and so either replicated or improved upon Study 1 results, in support of stated research hypotheses.

In regard to Collins and Read's (1990) AAS measure, correlations were also consistent with the study's hypotheses. The secure factor was correlated significantly, negatively with Neuroticism ($r = -.37$, $p < .01$), and significantly, positively with Extraversion ($r = .25$, $p < .05$), Agreeableness ($r = .21$, $p < .05$), TIE ($r = .22$, $p < .05$), and, highly, with TEIQ ($r = .55$, $p < .01$). Indeed, the secure AAS factor and SAAW appear interchangeable with respect to associations with other personality traits. The avoidant factor of the AAS scale was significantly positively correlated with Neuroticism ($r = .43$, $p < .01$), and significantly negatively with Extraversion ($r = -.36$, $p < .01$), Agreeableness ($r = -.24$, $p < .05$), TIE ($r = -.19$, $p < .05$), and highly with TEIQ ($r = -.65$, $p < .01$). The anxious AAS factor also correlated significantly positively with Neuroticism ($r = .41$, $p < .01$) and significantly negatively with TEIQ ($r = -.50$, $p < .01$). The associations reported here, between Adult Attachment Styles and the Big Five constructs, are largely in line with findings reported in an investigation of these by Shaver and Brennan (1992), which had served as the basis for the formulation of H2 both in Study 1 and in the current study.

Finally, correlations between attachment at work scales and demographic variables (also presented in Table 3.5) showed that IAW was significantly negatively correlated with both self-reported health ($r = -.19, p < .05$), and level of education ($r = -.31, p < .01$); moreover, these two demographic variables were also significantly, but positively, correlated with the secure AAS factor ($r = .26, p < .05$ for health, and $r = .20, p < .05$ for education). Avoidant AAS scores were significantly negatively correlated with religiousness ($r = -.21, p < .05$) and number of children ($r = -.19, p < .01$). Age was positively correlated with avoidant scores ($r = .27, p < .01$). Finally, anxious AAS scores were negatively correlated with health ($r = -.27, p < .01$) and, like avoidant AAS scores, with religion ($r = -.21, p < .05$) and number of children ($r = -.20, p < .05$).

3.9 Discussion

In this second study, the Adult Attachment at Work (AAW) measure that had been adapted from the AAS inventory (Collins & Read, 1990) was once again employed to assess presence of attachment at work and its role in work relationships. As reported in the Method section of this chapter (see also Table 3.4), Principal Component Analyses extracted two factors, a solution that replicated the result in Study 1. As in that study, the structure of the AAW measure conserved four of the six 'anxious' items loading onto a first factor, along with five of the six 'avoidant' items. All of the 'secure' items loaded onto a second factor. The remaining two 'anxious' items and the remaining 'avoidant' item loaded onto the second factor, but with somewhat weaker associations than were found for the 'secure' items (this relative difference was more clear cut in Study 1, possibly because of the somewhat larger sample size in that study). As in the prior study, the two factors were once again labelled insecure attachment at work (IAW) and

secure/autonomous attachment at work (SAAW). Also, results showed that 53% of the sample scored below average on the (insecure) IAW factor, whilst 53.5% scored above average on the (secure) SAAW factor. These frequencies are in line with those of Study 1, and with the typical distribution of overall insecure and secure attachment classifications in other studies and meta-studies in the mainstream attachment literature. Taken together, these results provide strong evidence in support of the overall H1 hypothesis that attachment is present in the workplace and affects work relationships.

A question remains, however, as to whether or not insecure attachment at work operates in more than one identifiable pattern. If the two factor structure differentiates between attachment security and insecurity, are there also distinct patterns of attachment insecurity at work, as have been found in other contexts, that have yet to be revealed? Consideration of Hazan and Shaver's (1990) investigation of love and work may shed some light on this matter. That research utilised a categorical measure of attachment style, such that respondents were self-assigned to one of three attachment style groups; the researchers then compared the three groups' responses to a range of self-report measures concerned with work-related items such as job satisfaction, perceived job performance, preference for working with others, use of work to avoid socialising, and relative importance of work vs. 'romantic' relationship. At 670 participants, this 'love and work' study's sample size was large (for attachment research, and certainly by comparison with the present attachment at work study); nonetheless, differences in work-related feelings amongst the three categories of respondents were found to be small, albeit in line with predictions (*ibid*, p.273). The researchers distributed a supplementary questionnaire, designed specifically for that research project, to a subset of the initial

respondents. In a sample of 260 questionnaire responses, 16 of the questionnaire's 35 work-related items yielded significant differences among the three attachment groups; only 2 of these items ("work leaves no time for friends" and "difficulty finishing projects") significantly differentiated between avoidant and anxious attachment. Finally, further discriminant analyses revealed more clearly the best discriminators between these two styles. These aspects of the Hazan and Shaver (1990) research leave open the possibilities that the discrepancy between our two-factor structure and their formulation of two forms of insecurity may be due to sample size and/or methodological differences.

Another plausible reason for our AAW measure not having "discovered" two different forms of attachment insecurity, if these are indeed to be found in work relationships, could be flawed instrumentation. An item by item comparison of Collins and Read's (1990) AAS measure with the AAW adaptation served as a reminder that, for example, their original item, *I am nervous when anyone gets too close*, which in that questionnaire was categorised as a measure of avoidant attachment style, in the AAW measure became *I get nervous when anyone at work confides too much*. AAS responses may have been 'cued' by the phrase *too close* (as presumably was intended, for a measure of avoidance), whereas AAW responses may have been 'cued' by the phrase *I get nervous*, which might be argued to have more face validity as a measure of anxious than of avoidant attachment. It would not take many such confounds to diminish substantively the precision of a measure comprising 18 items in total.

Nonetheless, it is also possible that, even with an imperfect measure, the two-factor solution accurately reflects the construct under study. As noted in the Discussion section of Study 1, and the introduction to the present study, a number of attachment

researchers have found two major dimensions to attachment, sometimes characterised as ‘anxiety about relationships’ and ‘comfort with closeness’ (Brennan et al, 1998; Crowell et al, 1999; Feeney, 1999); within the line of adult attachment research dominated by personality and social psychologists, there is a growing consensus that there are two underlying dimensions of attachment (e.g., Shaver & Mikulincer, 2002; 2004). The two AAW factors certainly could be viewed as relating to these two dimensions. Two multiple regressions were performed on the Study 2 data to test how much variance in the work adaptation of the attachment inventory could be accounted for by the original scale. IAW and SAAW were treated as criterion variables, whilst secure, avoidant and anxious AAS were tested as predictors. Modest variance was accounted for in each instance, with AAS avoidant attachment a significant predictor where IAW was a criterion variable, and AAS secure attachment a significant predictor where SAAW was a criterion variable.

Study 2 repeated Study 1’s attempt at a conceptual replication, in the context of work relationships, of earlier research that revealed associations between the Big Five Personality Traits (Costa & McCrae, 1992) and romantic attachment style (Shaver & Brennan, 1992). The original findings included associations between anxious attachment and Neuroticism, and between secure attachment and Extraversion and Agreeableness. As reported in the previous chapter, Study 1 findings were partly successful in replicating these findings; here, Study 2 findings wholly replicated the original research findings, and also found a significant negative correlation between IAW and Conscientiousness ($r = -.20, p < .05$). Overall, correlations between these two sets of factors show that they are related but not redundant. The original romantic attachment research also found that “the NEO scales were generally not as powerful as the [romantic] attachment-style measures

in predicting romantic relationship outcomes, probably because of the greater specificity of the attachment measures” (Shaver & Brennan, 1992, p. 536). Further research comparing the relative predictive ability of the AAW and the Big Five traits, in relation to work performance outcomes, would certainly be of interest. In this regard, the association found in the present study, between IAW and Conscientiousness, is particularly worthy of note, because this Big Five dimension has been regarded as a measure of achievement (Mount & Barrick, 1995) and is widely utilised as such in the business context (Salgado, 1997).

The association reported in Study 1, between AAW and Trait Emotional Intelligence, was even more strongly revealed in the present study. As reported in the results section of this chapter, IAW was found to be negatively correlated with TEIQ ($r = -.40, p < .01$) and SAAW was significantly positively related to TEIQ ($r = .56, p < .01$). In the light of burgeoning interest within the field of management development in emotional intelligence as a management competency, these results should be of interest to organisational practitioners, offering insight into *why* managerial styles differ that may be brought to bear on how to effect desired behavioural change.

Hazan and Shaver (1990), in their research on love and work, and Elliot and Reis (2003), in their study of attachment and exploration in adulthood, both recognised the need for a strengthened conceptualisation of the exploratory system beyond that offered by Bowlby or in subsequent explications of Attachment Theory. Typical Intellectual Engagement (TIE) has been put forward to operationalise the influence of personality on the development of adult intelligence and knowledge (Chamorro-Premuzic & Furnham, 2004), and as such seemed an appropriate measure of certain aspects of adult exploration.

From this perspective, attachment theory would predict a positive association between secure attachment and TIE, as was indeed found in the present study. As reported in the Results section of this research chapter, a significant positive correlation was revealed between SAAW and TIE ($r = .29, p < .01$). Taken together, the correlations between SAAW and both TEIQ and TIE support conceptualisation of attachment theory's exploratory behavioural system as a combination of both trait emotional intelligence and crystallised intellectual engagement.

Finally, where comparisons are available, Study 2 findings related to demographics are in the main in line with those of previously published attachment research. For example, Hazan and Shaver (1990) predicted and found that secure attachment was associated with higher levels of physical and psychological health relative to either form of insecure attachment, and was linked to a greater sense of overall well-being, and less illness. Many romantic attachment studies have relied upon university students as participants, thereby precluding examination of associations between attachment styles and comparative level of education or of income. Hazan & Shaver (1990) used a sampling methodology that permitted such analyses, and found that whereas, overall, the women who participated in their research were on average less well educated and had lower income than the men, individuals who categorised themselves as anxious reported the lowest average income of the three attachment style groups, and this income difference was independent of the sex difference and was not due simply to education (*ibid*, p. 278). Although those who placed themselves in the 'secure' category in that study reported a significantly higher level of education than did those in the two other groups, a three-way (Sex x Education x Attachment Type) ANOVA predicting

income revealed no significant interaction between sex and attachment type or between education and attachment type (*ibid*). Study 2 had similar findings in relation to attachment security and education; no significant differences emerged in terms of income, possibly due to the relatively smaller sample size or other sampling differences. Study 1, recall, had found a significant positive correlation between age and SAAW. By contrast, Study 2 found a very similar correlation between age and avoidant AAS. Attachment theory makes no predictions about the effects of age on type of attachment, *per se*; the discrepant findings reported here and in Study 1 are most likely attributable to sampling differences. The Study 2 finding of a significant negative correlation between insecure AAS and number of children is in line with the Study 1 finding of a significant positive correlation between SAAW and number of children. In addition, Study 2 found a significant negative correlation between both types of insecure AAS and religiousness; in a related finding, Kirkpatrick and Shaver (1992) reported that respondents who classified themselves as ‘secure’ were significantly more likely than were self-assigned ‘insecure’ respondents to report a secure attachment to God.

In summary, results of this research show that two measures of attachment—the AAS (Collins & Read, 1990) measure of attachment style in romantic relationships and the attachment at work adaptation—have tapped into what might be regarded as two distinct but related constructs, or alternatively as two distinct aspects of the same overall construct. Factor analysis revealed the same two AAW factors in studies 1 and 2, with each factor comprising the same subset of AAW items in both studies, and all items accounted for between the two respective factors. These two factors, SAAW and IAW, align well with attachment theory’s most basic differentiator, *viz*, secure versus insecure

attachment, and also conform to the view, increasingly referenced in the personality/social psychological line of the adult attachment literature, that there are two major underlying dimensions of attachment (Shaver & Mikulincer, 2004). In addition, the present research found significant correlates between attachment and personality traits. Further research is required, including to examine the relationship between attachment at work and 'state of mind' regarding attachment relationships (e.g., concurrently deploying the AAI procedure as originally envisaged for Study 1); to investigate, further, the precision of the AAW measure, comparing it with one or more other measures of attachment (e.g. Bartholomew & Horowitz, 1994); to study further the relationship between personality and attachment at work; to investigate, further, the relationship between attachment security and exploratory behaviour at work; and to investigate the relationship between attachment at work and job performance.

Chapter 4. Adult Attachment at Work: Its Discriminant Validity in relation to Personality and other Individual Difference Variables

4.1 Introduction

The introduction of the Adult Attachment Interview (George et al, 1985) and, soon thereafter, Hazan and Shaver's (1987) seminal paper conceptualising romantic partnerships as attachment relationships, marked the beginning of what has by now become a substantial (and expanding) literature on adult attachment, with sub-strands rooted, respectively, in the developmental, and the personality and social psychological traditions. In a further contribution to the latter sub-strand, Hazan and Shaver employed their categorical measure of adults' romantic attachment styles to study how adults with these different styles might differ in their approaches to their work (Hazan & Shaver, 1990). In contrast to the rest of the adult attachment field, follow-on research in the specific area of attachment at work has remained relatively limited. Despite investigation, elsewhere in the field, into the existence of multiple internal working models of attachment and their relationships with one another (e.g., Klohnen et al, 2005; Overall et al, 2003), researchers concerned with attachment at work have tended, as did Hazan and Shaver (*ibid*), to rely on extant measures of attachment that were originally developed for use in non-work contexts.

The two studies in the preceding chapter were concerned, in part, with validation of a self-report questionnaire developed to assess attachment orientations in the workplace. The Attachment at Work (AAW) questionnaire was adapted from one of the several continuous measures of adult romantic attachment (Collins & Read, 1990) that in turn derived from Hazan and Shaver's (1987) categorical measure. In both of the preceding studies, the AAW was administered to professionals employed in a wide

variety of organisational contexts, and was validated in part against well-established individual difference measures (see Studies 1 and 2).

The three studies presented in the current chapter aim to replicate and extend findings from this earlier research about the presence of attachment at work and, in particular, to investigate further the relationship between attachment at work and established personality traits. (Other individual difference measures of interest also have been included; these vary from study to study and are discussed in the presentations of individual studies that follow.) To this end, the first two of these studies will again employ the new Adult Attachment at Work (AAW) questionnaire; the third study will introduce an alternative measure of attachment at work, described in that study's method section. Where the AAW is used, because it is still a new measure, its construct validity will continue to be tested rather than assumed. The relationship between attachment at work and the "Big Five" will be investigated using a longer, more complete measure of these personality traits than was employed in the first two studies, viz, the NEO-PI-R (Costa & McCrae, 1992). Study 3 also serves as a first opportunity to investigate attachment at work within one organisational context.

Study 3

4.2. Study 3 Introduction

This study is concerned with the relationships amongst adult attachment in the workplace, self esteem, and personality, assessed within a multi-national business in the publishing industry. Three major hypotheses have been formulated regarding the Adult Attachment at Work (AAW) inventory used in this study and its relationships with other, established constructs. First, a replication will be attempted of the structure of AAW previously found. Secondly, the relationship between the AAW inventory and the NEO-PI-R (Costa & McCrae, 1992) will be explored, enabling examination of sub-facet relationships. Thirdly, an investigation will be made of the relationship between the AAW inventory and self esteem, a construct of ongoing interest within both the management development arena (Cook et al, 1981; Zaccaro, 2001) and the field of Attachment (e.g., Bartholomew, 1990; Horowitz and Bartholomew, 1991; Feeney, 1999). Specifically:

H1: Principal Component Analysis will identify two distinct factors. Examination of the items loading on each factor will support the view that they correspond with 'secure,' and 'insecure' attachment styles at work, respectively. This would be consistent with the findings in two previous studies utilising the adapted AAW inventory.

H2: Associations discovered by Shaver and Brennan (1992) and Carver (1997), and reported by Cassidy (1999), between the five personality traits and romantic attachment dimensions were partially replicated in one and wholly replicated in the other of these two previous studies of attachment at work (see Chapter 3). The current study again aims to replicate these associations in relation to attachment at work. Specifically,

it is predicted that: H2a: Neuroticism will be significantly negatively correlated with secure and positively with insecure attachment style at work. H2b: Extraversion will be significantly positively correlated with secure and negatively with insecure attachment style at work. H2c: Agreeableness also will be significantly positively correlated with secure and negatively with insecure attachment at work. Although no significant associations were reported between the remaining two personality traits (Openness to Experience and Conscientiousness) and romantic attachment dimensions, these two traits tend to be of interest in mainstream organisational psychology research, and will be tested in the analyses.

H3: Self esteem will be significantly and positively related to secure attachment at work. This would be consistent with results in the previous studies of attachment at work, and also consistent with what Attachment Theory specifies in relation to the role of the internal working model of self (and other) as this may bear on the individual's formulation of a particular attachment orientation (e.g. Bowlby, 1973; Bartholomew & Horowitz, 1991).

Finally, demographic variables will also be examined with regard to AAW factors. Although no specific hypotheses are stated about these, it will be of interest to see whether the relationships among personality traits and demographic variables conform to findings in other research, and to see what relationships emerge between attachment and demographic variables such as geographical location (US vs. UK), gender, age, and job-type (i.e., non-management, supervisory, management, senior management).

4.3. Method

Participants

Overall, 248 working adults took part in this survey, which was conducted during the second half of 2005. All participants were employed within one multi-national corporation when they volunteered to be part of this study. Of these, 107 participants were employed in the UK, and 141 in the US. Preliminary analyses revealed no statistically significant differences between these two geographical sub-groups on the measures employed; accordingly, these were treated as sub-samples of one overall sample.

The sample comprises nearly twice as many female (165) as male (83) participants. Average age at the time of survey was 39.5 years (standard deviation slightly more than 11 years). Eighty-six percent of the volunteers described themselves as White/Caucasian; 3% as Black (either Afro/American or Caribbean); 2% as Asian (UK terminology, e.g. Pakistani; Bangladeshi); 2% as Oriental (UK terminology, e.g. Chinese; Japanese); 7% did not respond to this question. Fifty-nine percent characterised themselves as American; 39% as British; 2% specified other nationalities. Seven percent of the participants had doctoral degrees, another 7% had law degrees; 42% had master's degrees (MA, MSc, MBA); 33% were university graduates (aka 'college graduates' in the U.S.); 9% were high school graduates; 2% did not report their level of formal educational attainment. Participants were asked to characterise their jobs as non-management, supervisory, management, or senior management. Of the 245 participants who responded to this question, about 53% characterised their jobs as 'non-management' positions; the

rest were distributed as follows: about 12% in supervisory posts; 26% in management posts; 9% in senior management posts.

Procedure

Beginning in mid-July, 2005, an email invitation was randomly distributed from within the business's headquarters to 1000 UK employees. Beginning in mid-October 2005, the same email was randomly distributed to 2000 US employees. The email, signed by a member of the Corporation's Board, briefly described the research, underscored that participation was voluntary and anonymous, and encouraged recipients to volunteer. Anyone who was interested in participating was invited to contact the researcher directly, also via email. Once contacted, the researcher obtained the volunteer's preferred postal address and sent out a research pack with questionnaires, instructions, and a return addressed envelope. In order to contain costs and risk of loss—particularly high with international mail—the researcher organised intra-country distribution and return of questionnaires, and in due course transported all of the US returns back to the UK for data analysis.

Initial response in the UK was so low that, in order to generate the minimum number of participants required for purposes of statistical validity (100), the researcher re-contacted the first fifty UK volunteers who had returned completed questionnaires, explained that response was low, and asked each of them, if they felt able to do so, to invite colleagues to participate. This led to a small surge in volunteers from the UK. In addition, the researcher sent out four rounds of reminder/chaser emails to those who'd received research packs until, in the end, she obtained a very high percentage of returns, and achieved the required minimum number of responses. US recruitment, which started

later, drew upon the UK experience. Emails were again randomly distributed, but in this instance twice as many (2000) were sent out. As a result, the target number of US volunteers (100) was achieved without the need for further recruitment efforts, and with fewer rounds of chasing.

In the UK, research packs were distributed to 111 volunteers, for 107 completed returns, a return rate of over 96%. In the US, research packs were distributed to 174 volunteers, for 141 returns, a return rate of 81%. (For logistical reasons, an end of year deadline was set; just one US return arrived too late to be transported back to the UK for inclusion in the data analyses.) Thus, overall the response rate to the original, randomly distributed email was predictably low, 9.5%, but the return rate amongst those who chose to volunteer was high, 87% overall.

Feedback

All participants were offered a confidential, one page summary of their individual responses to a validated personality assessment that was included in the survey, and were offered a one page summary of the study's overall, aggregate findings. The Board member who sponsored this research was provided with a written report of aggregate results, followed by a meeting to discuss these with the researcher.

Measures

In all, three questionnaires were deployed in this study:

NEO-PI-R (Costa & McCrae, 1992). This well-established questionnaire assesses the "Big Five" personality factors and their underlying primary facets. With 240 items, it is the most complete form of this measure. Items involve questions about typical behaviours or reactions that are answered on a five-point Likert-type scale (*Strongly*

Disagree-Disagree-Neutral-Agree-Strongly Agree). Over more than a decade, an extensive body of empirical and psychometric evidence has built up in support of the reliability and validity of the NEO-PI-R, and there is wide agreement among differential psychologists that the Big Five personality traits represent the most comprehensive and universal taxonomy for describing and understanding individual differences in normal personality dimensions (see Chamorro-Premuzic & Furnham, 2005; Matthews & Deary, 1998 for recent reviews on the topic). For the present sample, the means, SD's, and reliabilities (Cronbach's α) for the "Big Five" factors were: Neuroticism ($X = 82.01$, $SD = 22.35$; $\alpha = .86$), Extraversion ($X = 115.80$, $SD = 19.89$; $\alpha = .82$), Openness to Experience ($X = 126.63$, $SD = 17.60$; $\alpha = .81$), Agreeableness ($X = 124.12$, $SD = 15.23$; $\alpha = .80$), and Conscientiousness ($X = 124.34$, $SD = 19.23$; $\alpha = .84$). Most of these results are in line with population norms for US and UK adults; however, Openness scores in this sample are two standard deviations higher than in the overall adult population (Costa & McCrae, 1992).

Self esteem. As in Study 1, but using a 5-point Likert-type scale (again ranging from *Strongly Disagree* to *Strongly Agree*). The reliability of the scale in the present sample was $\alpha = .80$.

Adult Attachment in the Workplace (AAW). As in Study 1.

4.4 Results

Data reduction

Table 4.1 presents the rotated component matrix with item loadings for the Principal Component Analysis (PCA) of the Attachment at Work Inventory. Based on the Eigenvalues (larger than 1) and the results of a Scree Test, two factors were extracted

and retained for further analyses. As shown, these factors were labelled SAAW (Secure/Autonomous Attachment at Work), and IAW (Insecure Attachment at Work).

Table 4.1: Rotated component matrix and factor loadings following PCA of the Attachment at Work inventory

	FACTORS	
	SAAW	IAW
9) I am somewhat uncomfortable depending upon other at work (R)	-.86	
7) I am comfortable depending upon others at work	.84	
3) I find it difficult to allow myself to depend upon others at work (R)	-.81	
15) I can count on work colleagues to support me when I need them	.56	
8) I do not often worry about someone confiding too much to me at work	.40	
1) I find it relatively easy to get close to others at work.	.40	-.32
14) I am comfortable having others depend on me at work	.39	
2) I do not often worry about being left in the lurch at work	.35	
12) I want to be completely in tune with my boss	.37	
13) Work colleagues are sometimes put off by my desire to be on their wavelength		.61
18) I often feel that I'm on my own in this company		.60
5) I often worry that work colleagues do not really trust me		.60
6) I find work colleagues reluctant to be as open as I would like		.56
4) Top management is never there when you need them		.55
11) I often worry that people will not want to stay on my work team.		.52
16) I find it difficult, in the workplace, to trust others completely		.39
Eigenvalue for each factor	3.26	3.05
Cronbach's α	.73	.71
Variance accounted for by each factor:	22.45%	22.09%

Note: $N = 248$; Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Cross-loadings smaller than .30 are not shown.

After Varimax rotation, SAAW accounted for 22.45% of the variance and had an Eigenvalue of 3.26, whereas IAW accounted for 22.09% of the variance, and had an Eigenvalue of 3.05.

Thus the combined factors accounted for approximately 45% of the variance. Two items that in the prior attachment at work studies had loaded onto the IAW factor, namely, “I get nervous when anyone at work confides too much,” and “Often, work colleagues want me to be more open than I feel comfortable being,” were dropped, this time, because their loadings were smaller than .10. Thus the SAAW factor consisted of the same 9 items as in the two prior attachment at work studies, and the IAW factor in this instance consisted of 7 of the 9 items that had loaded onto this factor in the first two studies.

The two attachment factors were highly and negatively inter-correlated ($r = -.52$, $p < .01$). The only significant demographic correlate of attachment was age, which correlated positively with SAAW ($r = .13$, $p < .05$).

Correlational Analyses

As depicted in Table 4.2, correlational analyses revealed strong relationships between Attachment at Work factors, self esteem, and personality, all consistent with predictions. SAAW and self esteem were significantly, positively correlated ($r = .29$, $p < .01$). All five major personality traits were significantly correlated with SAAW; as predicted, SAAW was negatively and significantly correlated with Neuroticism ($r = -.34$, $p < .01$), and positively and significantly correlated with both Extraversion ($r = .32$, $p < .01$) and Agreeableness ($r = .23$, $p < .01$). In addition, SAAW was positively and

significantly correlated with Openness to Experience ($r = .17, p < .01$), and Conscientiousness ($r = .24, p < .01$).

Table 4.2: Correlations between SAAW, IAW, Self esteem, and Big Five major dimensions

	S e	N	E	O	A	C
SAAW	.29**	-.33**	.32**	.17**	.23**	.24**
IAW	-.34**	.33**	-.11	.07	-.26**	-.25**
Self esteem		-.62**	.32**	.05	.10	.45**
Neuroticism			-.27**	.00	-.17**	-.47**
Extraversion				.35**	.08	.16**
Openness					.07	-.06
Agreeableness						.18**

Note. $N = 248$; ** $p < .01$, * $p < .05$ N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness, S e = Self esteem; SAAW = secure/autonomous attachment at work; IAW = insecure attachment at work

When examined at the primary facet level, correlations revealed several further statistically significant associations between SAAW and personality: SAAW was negatively and significantly correlated with five facets of Neuroticism: Anxiety ($r = -.28, p < .01$), Angry Hostility ($r = -.30, p < .01$), Depression ($r = -.26, p < .01$), Self-consciousness ($r = -.27, p < .01$), and Vulnerability ($r = -.31, p < .01$). SAAW was positively and significantly correlated with five primary facets of Extraversion: Warmth ($r = .32, p < .01$), Gregariousness ($r = .26, p < .01$), Assertiveness ($r = .21, p < .01$), Activity ($r = .13, p < .05$), and Positive Emotions ($r = .30, p < .01$). SAAW was

positively and significantly related to three primary facets of Openness: Feelings ($r = .19$, $p < .01$), Actions ($r = .18$, $p < .01$), and Ideas ($r = .15$, $p < .05$). SAAW was positively and significantly correlated with four primary facets of Agreeableness: Trust ($r = .37$, $p < .01$), Altruism ($r = .25$, $p < .01$), Compliance ($r = .18$, $p < .01$), and Tender-Mindedness ($r = .15$, $p < .05$). SAAW was positively and significantly related to four primary facets of Conscientiousness: Competence ($r = .28$, $p < .01$), Dutifulness ($r = .22$, $p < .01$), Achievement Striving ($r = .25$, $p < .01$), and Self-Discipline ($r = .25$, $p < .01$).

Also as predicted, IAW was negatively and significantly correlated with self esteem ($r = -.34$, $p < .01$). There were significant correlations between IAW and three of the Big Five major personality traits, namely Neuroticism, positively ($r = .33$, $p < .01$), and Agreeableness and Conscientiousness, negatively ($r = -.26$, $p < .01$; and $r = -.25$, $p < .01$, respectively).

IAW correlated positively with five primary facets underlying Neuroticism, namely Anxiety ($r = .27$, $p < .01$), Angry Hostility ($r = .29$, $p < .01$), Depression ($r = .31$, $p < .01$), Self-consciousness ($r = .22$, $p < .01$), and Vulnerability ($r = .27$, $p < .01$). There were two significant primary facet correlates of IAW underlying Extraversion, viz., Warmth ($r = -.16$, $p < .05$), and Positive Emotions ($r = -.17$, $p < .01$). IAW correlated significantly with four primary facets of Agreeableness: Trust ($r = -.27$, $p < .01$), Straightforwardness ($r = -.13$, $p < .05$), Altruism ($r = -.23$, $p < .01$), and Compliance ($r = -.15$, $p < .05$). Lastly, the significant correlations between IAW and the primary facets of Conscientiousness were Competence ($r = -.28$, $p < .01$), Dutifulness ($r = -.29$, $p < .01$), Self-discipline ($r = -.24$, $p < .01$), and Deliberation ($r = -.17$, $p < .01$).

Multiple Regressions Predicting Attachment at Work

In order to test the discriminant validity of personality and self esteem with regard to the two attachment factors, two multiple regressions were conducted. The first regression, which treated SAAW as criterion, included self esteem, the Big Five personality traits and age. As seen, this regression accounted for 20% of the variance in SAAW and Extraversion, Openness and Neuroticism (negatively) were significant predictors. When IAW was regressed onto the same predictors, the model explained 17% of the variance and Agreeableness and self esteem (both negatively) were significant predictors in the model (see Table 4.3).

Table 4.3: Multiple Regressions: Predicting Attachment at Work

	SAAW				IAW			
	β	SE	St. β	t	β	SE	St. β	t
S e	.05	.08	.04	.56	-.24	.09	-.21	2.70**
N	-.05	.02	-.18	2.28*	.03	.02	.13	1.73
E	.07	.02	.21	3.18**	-.00	.02	-.01	.18
O	.03	.02	.09	1.49	.03	.02	.09	1.47
A	.06	.02	.15	2.45*	-.08	.03	-.21	3.55**
C	.02	.01	.07	1.04	-.01	.02	-.04	.65
Age	.04	.01	.08	1.23	.00	.02	.00	.11
<i>AdjR2</i>	.20				.17			
<i>F</i>	(7, 234) = 9.43**				(7, 231) = 7.83**			

Note. $N = 248$; ** $p < .01$, * $p < .05$ N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness, S e = Self esteem; SAAW = secure/autonomous attachment at work; IAW = insecure attachment at work

Next, a second series of multiple regressions was conducted in order to test whether aspects of Openness and Conscientiousness would significantly predict SAAW and IAW beyond self esteem and the other three major personality traits. The selection of primary facets of Openness and Conscientiousness was based on their (significant)

correlations with SAAW and IAW (see Table 4.4). Thus the primary facet predictors included Feelings, Actions, and Ideas (from Openness), and Competence, Dutifulness, Achievement striving, and Deliberation (from Conscientiousness). The only significant primary facet predictor of SAAW was Feelings (st. $\beta = .17$, $t = 2.18$, $p < .05$), whereas the significant primary facet predictors of IAW were Dutifulness (st. $\beta = -.18$, $t = 2.45$, $p < .05$), and Achievement Striving (st. $\beta = .16$, $t = 1.98$, $p < .05$). As shown, the total amount of variance explained in both SAAW and IAW was similar to that in Table 4.3, and the only significant primary facet predictors of SAAW and IAW were feelings (o3), dutifulness (c3) and achievement striving (c4).

Table 4.4: Self esteem and personality (with primary facets of Openness and Conscientiousness) as predictors of SAAW and IAW

	SAAW				IAW			
	β	SE	St. β	t	β	SE	St. β	t
S e	.02	.08	.02	.29	-.19	.09	-.17	2.09*
N	-.07	.02	-.25	2.68**	.05	.02	.20	2.19*
E	.04	.02	.12	1.70	-.01	.02	-.03	.50
A	.05	.02	.14	2.31*	-.06	.02	-.16	2.62**
o3: feelings	.26	.15	.17	2.28*	-.02	.11	-.01	.24
o4: actions	.03	.10	.02	.37	.18	.10	.12	1.83
o5: ideas	.03	.07	.03	.53	-.00	.07	-.00	.06
c1: competence	.11	.14	.06	.80	-.12	.14	-.07	.89
c3: dutifulness	.03	.06	.02	.29	-.29	.11	-.18	2.45*
c4: achievement striving	.01	.12	.01	.13	.22	.12	.16	1.98*
c5: self-discipline	-.00	.02	-.00	.03	.03	.08	.02	.24
c6: deliberation	-.07	.01	-.05	.59	-.00	.07	-.00	.06
AdjR2	.20				.19			
F	(12, 230) = 6.01**				(12, 227) = 5.73**			

Note. $N = 248$; ** $p < .01$, * $p < .05$ N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness, S e = Self esteem; SAAW = secure/autonomous attachment at work; IAW = insecure attachment at work

4.5 Discussion

As with the two previous studies in which the Attachment at Work (AAW) measure was employed, factor analysis once again found two factors, here. In this instance, the same 9 items loaded onto one factor as in both previous studies; this factor has once again been labelled Secure/Autonomous Attachment at Work (SAAW). In the previous two studies all 9 of the remaining items loaded onto the second factor, with no cross-loading; in this instance only 7 of these 9 items loaded onto the same factor, with one of these 7 cross-loading (albeit with a smaller loading). This second factor has once again been labelled Insecure Attachment at Work (IAW).

Whereas Hazan and Shaver's (1987) categorical measure of romantic attachment was designed to portray one secure and two insecure attachment styles, in the current series of attachment at work studies just two factors have been repeatedly identified. The first of these, SAAW, has proven remarkably stable over the course of three studies. The second factor, IAW, has now, in three studies, repeatedly failed to differentiate between the most prevalent, distinct categories of insecure attachment identified in the mainstream attachment literature, and most particularly by Hazan and Shaver (1987), viz. 'avoidant' and 'anxious' (a.k.a. ambivalent; preoccupied), from whose categorical measure of romantic attachment the AAW was derived. In summary, based upon the three studies thus far conducted, IAW appears to be a less stable factor than SAAW, and also may be a less precise measure of the construct or constructs it is tapping.

In two previous studies of attachment at work, results replicated or partially replicated earlier findings of relationships between romantic attachment and the Big Five

personality traits (Costa and McCrae, 1992). In those studies, a short-form measure of these personality traits was utilised; in the present study, the long form NEO-PI-R (ibid) was substituted, in order to enable a more detailed examination of these relationships. Additionally, the current study's sample size (248) was more than twice that of either of the earlier AAW studies ($N = 117$; $N = 104$). Results clearly supported the second set of hypotheses, which were at the heart of this study; indeed, in this instance statistically significant relationships were found between attachment at work and all five of the main personality dimensions. Only the predicted relationship between IAW and Extraversion was not found; even here, the association was in the predicted direction, and significant correlations were found between IAW and two primary facets of Extraversion. This overall result may be accounted for by use of the longer, more detailed personality measure in this study, by the larger sample size, by characteristics of this particular sample, or by some combination of these factors. Apropos, it should be noted that Nofle and Shaver (2006) have recently reviewed earlier studies that explored associations between measures of adult attachment style and the Big Five, and have conducted new research in this area, in part comparing a two-dimensional measure of attachment style with the long-form NEO-PI-R. Their findings are discussed in the final chapter of this thesis, where the AAW's discriminant validity is further reviewed.

In the present study, the relationships that had been predicted between attachment at work and personality all fell in the predicted direction; that is, Neuroticism was negatively associated and Extraversion and Agreeableness positively associated with attachment security, just as had been found in earlier, romantic attachment research. In addition, significant relationships were found between attachment security at work and

both Openness to Experience and Conscientiousness—positive relationships in both cases. Hypotheses about associations between attachment at work and personality were limited to those that replicated earlier research between romantic attachment and personality; however the further findings in the present study, concerning the relationship attachment and between Openness and Conscientiousness make intuitive sense in the work context. In particular, by contrast, recall the counter-intuitive finding concerning the relationship between attachment at work and Openness reported in the first of this series of studies (see Study 1). Possible explanators for the differences in these two sets of findings include sampling and sample size differences, and differences in the measures employed. Overall, the relative strengths of the associations found, here, between attachment and work and personality—for the most part, moderate, with a modest correlation between SAAW and Openness—indicate a relationship in which the Big Five personality traits do not wholly account for AAW.

For four of the Big Five main dimensions, this organisational sample's mean scores conformed to population norms in both the US and the UK. Intriguingly, this sample's mean score for Openness to Experience was two standard deviations above the norm. Use of the long form personality measure enabled more detailed examination of this relationship, and revealed that the three sub-facets of Openness to Experience accounting for these high scores are the ones that tend to be associated with crystallised intelligence (Chamorro-Premuzic & Furnham, 2005). According to Attachment Theory, secure attachment is associated with increased exploration; in adults working in the intellectual environment of the particular business from which this study's sample was drawn—a major publishing enterprise—activation of the exploratory behavioural system

would be likely to be manifested in terms of crystallised intelligence. However, sampling procedures leave open the alternative explanation that the unusually high Openness scores are here indicative of self-selection bias rather than being representative of the organisation, overall.

In mainstream organisation research where the NEO has been utilised, Conscientiousness has been found, recurrently, to be significantly and positively related to management performance (Salgado, 1997; Schmidt & Hunter, 1998). Likewise, individuals with higher scores on Conscientiousness tend also to hold posts higher up on the corporate ladder. Results of this study support that wider finding, and point specifically to the four sub-facets of Conscientiousness, namely Competence, then Achievement Striving and Self-Discipline, and lastly Dutifulness, where significant associations with SAAW were found, as particular influences.

As predicted and as had been found in prior attachment at work studies, self esteem was here found to be significantly and positively related to attachment security at work. An alternative conceptualisation of adult attachment to that advanced by Shaver and Hazan (1987) makes explicit the individual's regard both for self and for other, leading to a two-by-two model in which four rather than three main categories of attachment are specified (Bartholomew & Horowitz, 1991). Particularly in the light of the recurrent findings of a strong relationship between attachment security at work and self esteem, follow-on research on attachment at work should include investigation of this four-category conceptualisation of attachment.

Study 4

Study 4.6 Introduction.

Following Hazan and Shaver's (1987) introduction of a categorical measure of romantic attachment, this strand of the field of attachment has generated extensive research, in which varying conceptualisations and a wide array of measures have been employed, resulting in considerable ambiguity as to whether one or numerous constructs are being tapped. Hazan and Shaver's (ibid) measure derives from early empirical research on infant attachment (Ainsworth et al, 1978) and is anchored in a 3-way conceptual model of attachment in which self-concept and other (caregiver) concept are assumed to be mutually reinforcing (Bowlby, 1973). An alternative, four-way conceptualisation of attachment, in which self and other are treated as independent (Horowitz, 1990), has also garnered considerable interest amongst adult attachment researchers (for reviews of adult attachment measures see Crowell, Fraley, & Shaver, 1999; Shaver & Mikulincer, 2004).

The present study continues the process of validating a self-report questionnaire developed specifically as a measure of attachment at work, the adult attachment at work (AAW) questionnaire. This measure was adapted from a romantic attachment questionnaire (Collins & Read, 1990), which in turn derived from Hazan & Shaver's (1987) categorical measure. The present study once again investigates the new measure's construct validity and seeks to replicate results from prior validation studies as to the relationships between attachment at work, established personality traits (the Big Five), and self esteem (see Studies 1-3).

In addition, this study aims to replicate an earlier investigation of the relationship between the attachment behavioural system and the exploratory behavioural system, as manifested in the workplace. As noted in the literature review and in Study 2, to date, within the attachment literature, the exploratory behavioural system has been far less well developed, conceptually, than the attachment behavioural system (e.g., Hazan & Shaver, 1990)). According to attachment theory, the attachment behavioural system interacts with the exploratory behavioural system. In the workplace, the latter may be conceptualised in terms of crystallised emotional intelligence and intellectual engagement, taken together. This study therefore includes measures of these two—trait emotional intelligence (TEI) and typical intellectual engagement (TIE)—which in both cases lie at the crossroads of personality and, in the one case, manifest competency in personal relations and, in the other, manifest intelligence, as distinguished from traditional I.Q. (Chamorro-Premuzi & Furnham, 2004). This study examines the relationship of these two measures with attachment at work. Finally, this study continues to investigate concurrent validity of the AAW in relation to other measures of attachment (see Study 2). In the present study, the Relationship Questionnaire (RQ, Bartholomew & Horowitz, 1991), which is based on the 4-way conceptualisation of attachment mentioned above, is introduced, permitting assessment of the concurrent validity of these two attachment measures, both directly with one another and in terms of their respective relationships with the other psychological constructs under study. In sum, this study's specific hypotheses are:

H1: Principal Component Analysis of the Attachment at Work (AAW) inventory will identify two distinct factors. Examination of the items loading on each factor will support the view that, as in previous attachment at work studies, they correspond with

‘secure,’ and ‘insecure’ attachment styles at work, respectively. This would be consistent with the findings in three previous studies utilising the adapted AAW inventory (see, for example, Study 1).

H2: Associations discovered by Shaver and Brennan (1992) and Carver (1997), and reported by Cassidy (1999), between the Big Five personality traits and romantic attachment dimensions were partially replicated in one and wholly replicated in two previous studies of attachment at work. The current study again aims to examine these associations in relation to attachment at work. Specifically, it is predicted that: H2a: Neuroticism will be significantly negatively correlated with secure and positively with insecure attachment style at work. H2b: Extraversion will be significantly positively correlated with secure and negatively with insecure attachment style at work. H2c: Agreeableness also will be significantly positively correlated with secure and negatively with insecure attachment at work. Although no significant associations were reported between the remaining two personality traits (Openness to Experience and Conscientiousness) and romantic attachment dimensions, these two traits tend to be of interest in mainstream organisational psychology research, and in Study 3 were both found to be significantly and positively correlated with secure attachment at work; they will again be tested in the analyses.

H3: Self esteem will be significantly and positively related to secure attachment at work, and significantly and negatively related to insecure attachment at work. This would be consistent with results in our previous studies of attachment at work, and also consistent with what Attachment Theory specifies in relation to the role of the internal

working model of self (and other) as this may bear on the individual's formulation of a particular attachment orientation (Bowlby, 1973; Crowell et al, 1999).

H4: TEI and TIE, serving as measures of adult exploration at work, will conform to what attachment theory predicts. Specifically: H4a: TEI will be positively and significantly related to secure attachment at work and negatively and significantly related to insecure attachment at work; H4b: TIE also will be positively and significantly related to secure attachment at work and negatively, significantly related to insecure attachment at work.

H5: Relationships between AAW and RQ factors, and between the latter and other psychometrics, will demonstrate concurrent validity of the two attachment measures. Specifically, H5a: Both RQ dimensions, Anxiety and Avoidance, will be significantly and negatively related to SAAW; H5b: Anxiety will be significantly and positively related to Neuroticism, and both Anxiety and Avoidance will be negatively related to both Extraversion and Agreeableness (although no predictions are made, relationships with Openness to Experience and Conscientiousness also will be tested); H5c: Anxiety will be significantly and negatively related, and Avoidance positively related to self esteem; H5d: both RQ factors, particularly Anxiety, will be significantly negatively related to the two-part measure of exploration, that is, TIE and TEIQ.

Finally, demographic variables will also be examined with regard to attachment factors. Although no specific hypotheses are stated about these, it will be of interest to see whether the relationship between personality traits and demographic variables conform to findings in other attachment research.

4.7 Method

Participants

There were 100 participants, of which 77 were male and 23 female. They ranged in age from 33 to 65 years, with a mean of 50.6 and standard deviation of 6.1 years. Thirty nine participants were in full employment at the time of completing the survey, whereas 61 were not in full time employment. Sixty five participants reported senior management as the highest job level achieved (either currently or the last time they were employed); whereas 12 participants reported management, and 18 technical/professional (5 participants reported “other”). The highest level of education achieved was GCSE/O-level for 3 participants, A-level for 1 participant, BA/BSc (or equivalent) for 50 participants, MA/MSc/MBA for 31 participants, PhD for 8 participants, and “other” for 7 participants. Seventy four participants reported themselves to be married; 9 participants reported themselves to be cohabitating; 7 participants reported themselves to be divorced; 6 participants reported themselves single; 1 participant reported separated (marital status was unreported by 3 participants). Thirty percent of participants described themselves as not religious; 57% as Christian, and 5% as other (e.g., Buddhist, Hindu, Jewish, etc.). Their median political orientation, assessed using a 7-point Likert-type scale of 1 = extremely left and 7 = extremely right, was 5. Ethnicity data were not recorded. There were no significant correlations between attachment styles at work and any of the demographic variables, other than age, which was negatively correlated with insecure attachment ($r = -.27$, $p < .01$), showing that younger participants tended to have a more insecure attachment style at work.

Measures

Six self-report questionnaire measures were utilised, overall, along with a set of questions designed to obtain socio-demographic information about the participants.

Adult Attachment in the Workplace (AAW). As in Study 1.

Relationship Questionnaire (Bartholomew & Horowitz, 1991). This short inventory consists of four paragraphs, each comprising a set of items that together convey the typical pattern of thoughts, feelings, and behaviours most characteristic of one of the four adult attachment styles identified by Bartholomew (1990). She conceptualised attachment based on a 4-way model of self (positive/negative) and other (positive/negative), and labelled the four attachment styles thus derived as secure, dismissing, preoccupied, and fearful (ibid). Following Griffin and Bartholomew's (1994) procedure, scores on avoidance were computed by subtracting the sum of the secure and preoccupied ratings (low avoidance) from the sum of the dismissing and fearful ratings (high avoidance) and scores on anxiety by subtracting the secure and dismissing ratings (low anxiety) from the sum of the preoccupied and fearful ratings (high anxiety). The average correlation between the low and high avoidance composites was -.41, and for the anxiety composites it was -.38.

Self-esteem. As in Study 3. For the present sample, the internal consistency of the scale was $\alpha = .74$.

Personality. The NEO-PI-R (Costa & McCrae, 1992). As in study 3. For the present sample, internal consistencies of the main five scales were $\alpha = .86$ for Neuroticism, $\alpha = .89$ for Extraversion, $\alpha = .81$ for Openness, $\alpha = .85$ for Agreeableness, and $\alpha = .89$ for Conscientiousness.

Typical Intellectual Engagement (TIE). As in Study 2. In the present study, the internal consistency was $\alpha = .84$.

Trait Emotional Intelligence Questionnaire (TEIQ). As in Study 1. The internal consistency of the scale was $\alpha = .88$ in the present sample.

Procedure

A London-based firm was approached that specialises in providing 'transition services' to professional employees who are being made redundant. This 'outplacement' firm agreed to sponsor the study, providing 100 managers in transition who would complete the survey. In return, the researcher agreed to provide the firm with an aggregate (anonymous) summary of findings, either in writing or in the form of a seminar for clients of the firm, and also to provide individual participants with one page summaries of their respective NEO (Big Five) results.

In the first instance, the researcher prepared and delivered 100 research packs to the firm, each of which contained a NEO-PI-R item booklet and answer sheet, 3-double-sided pages constituting the remaining questionnaires, and a cover note explaining the study, including terms of confidentiality, and providing the researcher's email address in case of any queries. The sponsoring firm's original intention was to distribute these to senior manager clients while they were in the firm's offices attending a seminar and/or making use of various transition services on offer; this would have ensured swift response time, minimised the risk of lost survey questionnaires, and eliminated postage costs. However, most of the managers approached expressed unwillingness to remain on the premises for the time required to complete the surveys, so return address envelopes were added to the packs, and these were then disseminated at weekly seminars.

Not surprisingly, this resulted in significantly less than a 100% response rate, even when clients who had volunteered were subsequently 'chased' by the researcher. The original aim had been to collect 100 survey returns, all from senior managers in transition, within two months. In fact, it took from September 2005 through March 2006 to obtain the sample examined herein, and required compromises in terms of participant parameters; as described above, as well as senior managers, this sample includes managers, professionals, some former clients of the sponsoring firm, who were re-employed prior to receiving/completing the survey, a current senior manager customer of the sponsoring firm, and several employees/contracted associates of the firm. (The last, it should be noted, consist solely of individuals who had been managers in other businesses at one time, and had themselves been through 'career transitions' prior to joining or becoming associates of this 'outplacement' firm.)

4.8 Results

Factor Analysis

Principal Component Analysis (PCA) with orthogonal varimax rotation and Kaiser normalization was performed on the 18 items of the AAW inventory and two major factors were identified, which, as in studies 1, 2, and 3, were labelled secure/autonomous attachment at work (SAAW) and insecure attachment at work (IAW). H1 was thus confirmed. The rotated component matrix, loadings, Eigenvalues, and internal consistency indicators (Cronbach's α) are reported in Table 4.5.

As displayed, 8 of the items loaded onto SAAW, which accounted for 30.73% of the variance, and another 8 items loaded onto IAW, which accounted for 28.21% of the variance. Two items of the original set, namely (#10) "I get nervous when anyone at

work confides too much” and (#12) “I want to be completely in tune with my boss” were therefore dropped. Factors were computed through simple addition of item scores.

Table 4.5: Rotated component matrix and factor loadings following PCA of the Attachment at Work inventory

	FACTORS	
	SAAW	IAW
7) I am comfortable depending upon others at work.	.80	
9) I am somewhat uncomfortable depending upon other at work. (R)	-.76	
2) I do not often worry about being left in the lurch at work.	.64	
3) I find it difficult to allow myself to depend upon others at work. (R)	-.62	
15) I can count on work colleagues to support me when I need them.	.57	
8) I do not often worry about someone confiding too much to me at work.	.50	
1) I find it relatively easy to get close to others at work.	.37	
14) I am comfortable having others depend on me at work.	.33	
16) I find it difficult, in the workplace, to trust others completely.		.61
5) I often worry that work colleagues do not really trust me.		.59
18) I often feel that I’m on my own in this company.		.57
13) Work colleagues are sometimes put off by my desire to be on their wavelength.		.54
4) Top management is never there when you need them.		.53
11) I often worry that people will not want to stay on my work team.		.51
17) Often, work colleagues want me to be more open than I feel comfortable being.		.44
6) I find work colleagues reluctant to be as open as I would like.		.41
Eigenvalue for each factor	2.97	2.27
Cronbach’s α	.75	.68
Variance accounted for by each factor:	30.73%	28.21%

Note: $N = 100$, Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. All cross-loadings were $< .30$.

Descriptive Statistics and Bivariate Correlations

Table 4.6 reports descriptive statistics (M and SD) and bivariate Pearson coefficients (r) for the inter-correlations between all measures. For Neuroticism, Agreeableness, and Conscientiousness, the present sample's scores were largely congruent with the manual norms. However, participants of this study were almost +1SD above the mean in both Extraversion and Openness to Experience scores. Scores in other measures were consistent with previously reported studies.

SAAW and IAW were highly and negatively inter-correlated ($r = -.57, p < .01$), consistently with previous studies. Correlations between attachment at work and the Relationships Questionnaire (RQ) showed that SAAW was significantly and negatively associated with both the anxious factor ($r = -.34, p < .01$), and the avoidance factor ($r = -.27, p < .01$), whereas IAW was positively and significantly related to the anxious factor ($r = .36, p < .01$), but not significantly to avoidance ($r = .11, p = .25$). The anxious factor of the RQ correlated significantly with self-esteem ($r = -.56, p < .01$), Neuroticism ($r = .48, p < .01$), Extraversion ($r = -.24, p < .05$), TIE ($r = -.19, p < .05$), and TEIQ ($r = -.50, p < .01$), whereas the avoidant factor of the RQ correlated significantly with Extraversion ($r = -.25, p < .05$), Openness ($r = -.35, p < .01$), and TEIQ ($r = -.23, p < .05$).

SAAW was negatively and significantly correlated with Neuroticism ($r = -.28, p < .01$), and positively and significantly correlated with Openness to Experience ($r = .21, p < .05$), Agreeableness ($r = .19, p < .05$), and TEIQ ($r = .39, p < .01$).

IAW was negatively and significantly correlated with self esteem ($r = -.28, p < .01$), Openness ($r = -.19, p < .05$), Conscientiousness ($r = -.27, p < .01$), TIE ($r = -.23, p < .05$), and, particularly strongly, with TEIQ ($r = -.51, p < .01$); there was also a significant and positive correlation between IAW and Neuroticism ($r = .35, p < .01$). There were no significant correlations between Extraversion and attachment at work.

Correlations between personality and attachment at work were further explored by looking at the primary facet level of the Big Five traits. The primary facets of Neuroticism that correlated significantly with SAAW were $n2 =$ angry hostility ($r = -.29, p < .01$), $n3 =$ depression ($r = -.25, p < .01$), and $n4 =$ self-consciousness ($r = -.25, p < .01$). The primary facets of Extraversion that correlated significantly with SAAW were $e1 =$ warmth ($r = .23, p < .05$), and $e2 =$ gregariousness ($r = .23, p < .05$). The only primary facet from Openness that correlated significantly with SAAW was $o4 =$ actions ($r = .23, p < .05$). The only primary facet of Agreeableness that correlated significantly with SAAW was $a1 =$ trust ($r = .32, p < .01$). There were no primary facets of Conscientiousness that correlated significantly with SAAW.

The same analysis was repeated with IAW. Correlations revealed that several primary facets of Neuroticism were significantly associated with IAW, namely $n1 =$ anxiety ($r = .22, p < .05$), $n2 =$ angry hostility ($r = .25, p < .05$), $n3 =$ depression ($r = .32, p < .01$), $n4 =$ self-consciousness ($r = .29, p < .01$) and $n6 =$ vulnerability ($r = .32, p < .01$). The only primary facet of Extraversion that correlated significantly with IAW was $e3 =$ assertiveness ($r = -.20, p < .05$). The only primary facet of Openness that correlated significantly with IAW was $o5 =$ ideas ($r = -.20, p < .05$). The primary facets of Agreeableness that correlated significantly with IAW were $a1 =$ trust ($r = -.31, p <$

.01), and a3 = altruism ($r = -.23$, $p < .05$). The primary facets of Conscientiousness that correlated significantly with IAW were c1 = competence ($r = -.35$, $p < .01$), c4 = achievement striving ($r = -.22$, $p < .05$) and c5 = self-discipline ($r = -.25$, $p < .05$).

Table 4.6
Correlations between SAAW, IAW, RQ factors, Self esteem, the Big Five personality traits, TIE and TEIQ

	<i>M</i>	1	2	3	4	5	6	7	8	9	10	11
	<i>SD</i>	<i>IAW</i>	<i>Anx</i>	<i>Avoi</i>	<i>SE</i>	<i>N</i>	<i>E</i>	<i>O</i>	<i>A</i>	<i>C</i>	<i>TIE</i>	<i>TEIQ</i>
SAAW	42.8 5.9	-.57**	-.34**	-.27**	.09	-.28**	.16	.21*	.19*	.09	.17	.39**
1	22.0 5.7		.36**	.11	-.28**	.35**	-.12	-.19*	-.15	-.27**	-.23*	-.51**
2	-3.6 3.8			.06	-.56**	.48**	-.24*	-.18	-.05	-.03	-.19*	-.50**
3	-1.4 2.9				-.02	.13	-.25*	-.20*	-.35**	.01	.09	-.23*
4	43.0 4.7					-.52**	.31**	.16	-.03	.11	.22*	.58**
5	69.2 21.5						-.28**	-.00	-.07	-.32**	-.16	-.69**
6	125.2 17.7							.45**	.06	.25**	.30**	.42**
7	122.2 18.4								.24*	-.09	.68**	.24*
8	117.9 16.5									.10	.06	.09
9	129.5 18.1										.21*	.38**
10	241.5 28.9											.30**
11	164.3 17.2											

Note: $N = 100$; ** $p < .01$, * $p < .05$ *Anx* = anxious factor, *Avo* = avoidant factor (RQ); *Se* = Self esteem, *N* = Neuroticism, *E* = Extraversion, *O* = Openness, *A* = Agreeableness, *C* = Conscientiousness (Costa & McCrae, 1992), *TIE* = Typical Intellectual Engagement (Goff & Ackerman, 1992), *TEIQ* = Trait Emotional Intelligence (Petrides & Furnham, 2003)

Multiple Regressions and Discriminant Validity

Two series of multiple regressions were then performed on the data to test the extent to which self esteem, the big five personality traits, TIE and TEIQ predict individual differences in secure/autonomous and insecure attachment at work. Regressions are reported in Table 4.7. As seen, the predictors explained 16% and 24% of the variance in SAAW and IAW, respectively. Self esteem and TEIQ were significant predictors of SAAW, whereas TEIQ was a significant predictor of IAW.

Table 4.7
Multiple Regressions: Predicting Attachment at Work

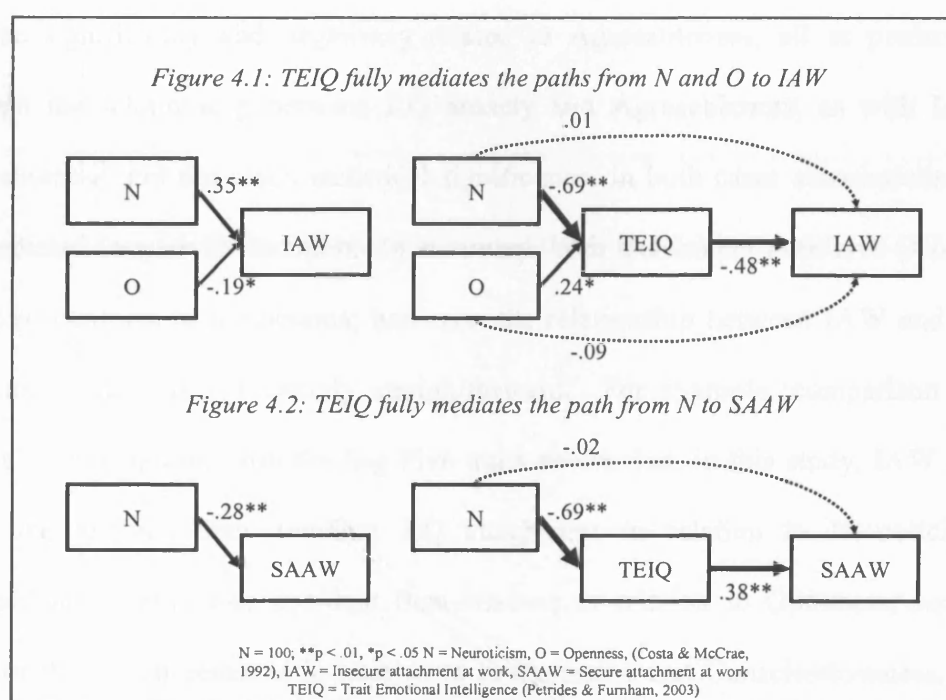
	SAAW				IAW			
	β	SE	St. β	t	β	SE	St. β	t
Self esteem	.30	.07	.24	1.99*	-.02	.09	-.02	.15
N	-.03	.01	-.10	.77	.01	.03	.03	.22
E	-.01	.02	.02	.12	.06	.02	.19	1.74
O	.03	.02	.08	.47	-.05	.04	-.15	.94
A	.05	.01	.13	1.27	-.02	.01	-.07	.77
C	.03	.03	.09	.89	-.04	.02	-.13	1.22
TIE	.03	.02	.03	.22	-.00	.02	-.01	.07
TEIQ	.05	.07	.47	3.08**	-.15	.06	-.46	3.23**
<i>AdjR2</i>	.16				.24			
<i>F</i>	(8, 91) = 3.33**				(8, 91) = 4.97**			

Note: $N = 100$; ** $p < .01$, * $p < .05$ N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness (Costa & McCrae, 1992), TIE = Typical Intellectual Engagement (Goff & Ackerman, 1992), TEIQ = Trait Emotional Intelligence (Petrides & Furnham, 2003)

Mediational Analyses:

A comparison between the correlations and the above regressions suggests that the relationship between personality and attachment may be merely a function of individual differences in TEIQ. Thus mediational analyses (Baron & Kenny, 1986) were

carried out in order to test whether TEI mediates the link between personality and attachment at work. As depicted in Figures 4.1 and 4.2, results showed that (top: Figure 4.1) the significant paths from Neuroticism and Openness to IAW are fully mediated by TEIQ, suggesting that Neuroticism and Openness may only affect IAW through TEIQ. Thus low Neuroticism and high Openness would lead to high TEIQ, which in turn determines low IAW. On the other hand (bottom: Figure 4.2) the link between Neuroticism and SAAW was also fully mediated by TEIQ, suggesting that high Neuroticism may only lead to low SAAW because it reduces TEIQ.



4.9 Discussion

Overall predictions about the relationships between attachment at work and other psychometrics were mainly confirmed, although in this instance the AAW demonstrated

a modicum of instability in relation to both SAAW and IAW. Both RQ factors (anxiety and avoidance) were significantly and negatively related to SAAW, as predicted. Also, the anxiety factor of the RQ was significantly and positively related to IAW; however, the avoidant factor of the RQ showed no significant relationship with IAW, in contrast to the moderate correlations between IAW and both insecure romantic attachment styles found in Study 2.

RQ anxiety was, like IAW, significantly, positively related to Neuroticism and negatively to self esteem (highly), TIE, and TEIQ, all as predicted. Both RQ measures were significantly and negatively related to Extraversion, and RQ avoidance was likewise significantly and negatively related to Agreeableness, all as predicted, and although the relationship between RQ anxiety and Agreeableness, as with IAW and Agreeableness, did not reach statistical significance, in both cases associations were in the predicted (negative) direction. In summary, both attachment measures (AAW, RQ) tended to conform to predictions; however, the relationship between IAW and the two RQ dimensions was not entirely straightforward. For example, comparison of their respective associations with the Big Five traits shows that, in this study, IAW behaved more like anxious than avoidant RQ attachment in relation to Neuroticism and Agreeableness, more like avoidant than anxious in relation to Openness, and unlike either of the RQ dimensions in relation to Extraversion and Conscientiousness. Where study results did not confirm predictions, but were in the predicted direction, this may have been due to instability of the attachment measures, and/or to the relatively small sample size.

Recall that in previous studies utilising the AAW a significant, positive relationship between SAAW and self esteem had been consistently found. The RQ is based on a 2 x 2 model where 'self' and 'other' are variously held in 'high' or 'low' regard. With this construct, the avoidance factor would likewise be predicted to be associated with relatively high, and the anxious factor with lower self esteem. However, this study neither replicated the finding of significant positive relationship between SAAW and self esteem, nor found such a relationship between RQ avoidance and self esteem. An initial interpretation was that this might be accounted for by specific characteristics of this study's sample, related to the fact that over 60 percent of them were in employment transitions and this might have negatively impacted upon their self esteem. Yet, descriptive statistics for self esteem were in line with the norms; moreover, there were no significant self esteem differences between full time employed and un/under-employed individuals. It remains possible that the experience of recent job loss for the large majority of our sample did have something to do with the anomalous findings, in this study, vis a vis the relationship between attachment and self esteem, but the current study does not offer data that enable us to test this hypothesis.

Results of this study provide some support for the use of TIE and TEIQ to operationalise the exploratory behavioural system at work, although the role of TEIQ overshadows the contribution of TIE. Indeed, it may be that TIE taps into both insecure and secure attachment. By way of illustration, an individual might read books as an avoidance strategy (ala insecure avoidant) or might read as an exploration strategy (ala secure attachment). The results of this study that remain of particular interest concern the relationship between attachment at work and trait emotional intelligence (TEI). As

the regression and mediation analyses suggest, the role of TEIQ is key in accounting for virtually all of the significant relationships found in this study. From a practical perspective, this finding is very encouraging. While TEI, as a construct, continues to be much debated in academic circles, it has been widely accepted in the management arena as an important factor in managerial effectiveness. This recognition falls short of enabling practitioners to develop managers' trait emotional intelligence. The analytic methods utilised in this study entail predictions in the statistical not the causal sense. That said, taking a step back from these findings to consider what attachment theory might suggest, it seems plausible that the theory implies a causal relationship between attachment security and the development of emotional intelligence. How this bears on development of trait emotional intelligence in the workplace remains a question, which would need to be considered relative to the question of whether and if so under what circumstances adults' attachment orientation at work might change. Further research is required, and is surely warranted, to refine our understanding of the relationship between attachment at work and TEI, as this may be applied to the work of executive coaches, and to other management development interventions.

Study 5

4.10 Study 5 Introduction

In two previous studies (Studies 3 and 4), findings from initial research (Studies 1 and 2) about the presence of attachment at work and its relationships with established personality traits, most notably the “Big Five,” were replicated and extended by employing the longest and most complete self-report measure of the “Big Five,” now available, viz, the NEO-PI-R (Costa & McCrae, 1992). In both of those follow-on studies, significant associations between attachment security at work and Neuroticism (negative) and Agreeableness (positive) were predicted and found. In Study 3, a significant association was likewise predicted and found between attachment security at work and Extraversion (positive); in Study 4, with a sample just 2/5ths the size of the Study 3 sample, whilst this last predicted association did not achieve significance, findings were in the predicted direction. In both of these studies significant associations were also revealed between AAW and both Openness to Experience and Conscientiousness (for details of these associations, including sub-facet associations, see Studies 3 and 4).

Taken together, the findings of these four studies, and particularly of the latest two, where the long-form NEO was employed, provided quite substantial support for hypotheses concerning the relationship between attachment at work and personality. Findings both demonstrated associations between these constructs and confirmed the discriminant validity of AAW in relation to the Big Five personality factors. In addition, in Study 4 TEI was shown to mediate the link between attachment at work and

personality. Practical implications of this were considered in the discussion section at the end of Study 4.

For the present study, the NEO-PI-R (Costa & McCrae, *ibid*) was used one more time; here the aim was to hold the personality measure constant while introducing an alternative measure of attachment at work. This new measure, the Work Relationship Categories (WRC) questionnaire, was adapted from the Relationships Questionnaire (RQ; Bartholomew & Horowitz, 1991), and administered as a 'professional assessor' measure, as described in the method session that follows. As originally conceived, this study was also to have included the original AAW, so that comparisons could be made between responses on these two measures of attachment at work, completed by two different types of sources, i.e., from two different perspectives.

All of the data included in this study were obtained from a consulting firm of business psychologists, who agreed to share their client data, in confidence, for the purpose of this research. The consultants provided data completed by clients from one, intact business, and originally planned to supplement this data set by having these same clients complete AAW questionnaires also; unfortunately, administration of the AAW was not completed in time for inclusion of those responses in the analyses reported herein. In addition to the NEO-PI-R (Costa & McCrae, 1992), three other measures of regular use in organisational research were included in the compendium administered by the consultants. These were a survey designed to assess eleven common dysfunctional dispositions and sometimes characterised as complementary to the NEO as a measure of the 'dark side' of personality (Hogan Development Survey; HDS, Hogan & Hogan, 1997); a questionnaire that assesses cognitive aspects of personality and that has been

cited as more frequently utilised in business applications than any other psychometric measure (Myers Briggs Type Indicator, MBTI: Briggs & Myers, 1987, 1992) ; and a highly-regarded measure of graduate and managerial assessment (GMA-A; Blinkhorn, 1985); descriptions of these measures appear in the method section, below.

H1: Relationships between the attachment at work categories (as assessed by experts utilising the WRC measure) and NEO factors will conform sufficiently to previous findings regarding associations between the NEO and attachment at work (as assessed using the AAW questionnaire) to provide support for construct validity of the WRC questionnaire as a measure of attachment at work, while also revealing limitations generally associated with use of a categorical measure. Specifically, H1a: the ‘secure’ category will be significantly (negatively) and ‘preoccupied’ and ‘fearful’ categories significantly (positively) associated with Neuroticism; H1b: ‘secure’ will be (positively) and ‘fearful’ and ‘dismissing’ (negatively) associated with Extraversion; H1c: ‘secure,’ will be (positively) and ‘dismissing’ (negatively) associated with Agreeableness. In keeping with the previous studies, associations between attachment at work and Openness and Conscientiousness, although not predicted, will also be examined.

Although no formal hypotheses have been generated about the nature of the relationships that might emerge between the WRC and the HDS, MBTI, and GMA-A, these other measures are all of widespread use by organisational psychologists and practitioners, and thus statistical associations will be examined as evidence of convergent and divergent validity of this attachment at work measure.

4.11. Method

Participants and Procedure. The consulting firm of business psychologists that provided the data used in this study regularly conducts, for client companies, assessments

of groups of their clients' employees. In this case, assessment data were provided on 114 (21 female) professionals, managers, and senior managers, all employed within one privatised UK company. Their ages ranged from 31 to 65 ($M = 45.1$, $SD = 7.7$) years. For these assessments, participants had completed a number of psychometric measures, and each participant had been interviewed by a business psychologist, who allocated an additional rating of the individual's potential, also included in the data set. For the purposes of this study, these business psychologists then completed the bespoke measure of attachment at work, the WRC questionnaire, rating the same participants whose potential they had already assessed. Participants' basic demographic data had also been obtained (date of birth; Sex; Ethnicity; Organisation Function and Level). Once compiled, the complete data set was transferred via email to the researcher for analysis.

Measures

1) Personality:

a) The *NEO Personality Inventory - Revised* (NEO-PI-R; Costa & McCrae, 1992). As in study 3.

b) *Hogan Development Survey* (HDS; Hogan & Hogan, 1997). The HDS assesses eleven common dysfunctional dispositions that are thought to be caused by people's distorted beliefs about how others will treat them, and to have a negative influence on people's careers and life satisfactions (Hogan & Hogan, 1997, p.1). The emphasis on cognitive distortion inherent in these dispositions suggests the possibility of common ground with attachment theory's internal working models of attachment—in particular, those associated with insecure attachment—for point-in-time comparisons. Furthermore, this instrument was designed specifically to be used in the selection, development, and

counselling of business leaders (ibid; Furnham & Crump, 2005), making it particularly appropriate for organisational research. For both reasons, it seems a particularly appropriate measure of the 'dark side' of personality to include here. An overview of HDS item selection guidelines appears in Hogan and Hogan (2001). The HDS measure comprises 154 items, scored for 11 scales (see descriptions, below), each with 14 items; respondents respond on a Likert-type scale, indicating their degree of agreement or disagreement. The HDS self-report measure has been cross-validated with the MMPI personality disorder scales. Descriptions of the 11 HDS Scales follow:

Excitable—Moody and hard to please; intense but short-lived enthusiasm for people, projects, or things.

Sceptical—Cynical, distrustful, and doubting others' true intentions.

Cautious—Reluctant to take risks for fear of being rejected or negatively evaluated.

Reserved—Aloof, detached and uncommunicative; lacking interest in or awareness of the feelings of others.

Leisurely—Independent; ignoring people's requests and becoming irritated or argumentative if they persist.

Bold—Unusually self-confident; feelings of grandiosity and entitlement; over-valuation of one's capabilities.

Mischievous—Enjoying risk taking and testing the limits; needing excitement; manipulative, deceitful, cunning and exploitive.

Colourful—Expressive; animated and dramatic; wanting to be noticed and needing to be the centre of attention.

Imaginative—Acting and thinking in creative and sometimes odd or unusual ways.

Diligent—Meticulous, precise and perfectionistic; inflexible about rules and procedures; critical of others' performance.

Dutiful—Eager to please and reliant on others for support and guidance; reluctant to take independent action or to go against popular opinion.

(Sources: Furnham & Crump, 2005, p.172; Hogan & Hogan, 1997, pp. 8-9.)

c) The *Myers-Briggs Type Indicator—Form K, European English Edition* (MBTI; Briggs & Myers, 1987; 1992) is a self-report personality inventory based on Jung's (1971) psychological "types," which in the MBTI are represented as dichotomies: Extraversion/Introversion, Sensing/Intuition, Thinking/Feeling and Judging/Perceiving. It is composed of 94 forced-choice items that constitute the four bipolar discontinuous scales thought to be implied in Jung's theory. Respondents are classified into one of 16 personality types based on the largest score obtained for each bipolar scale (e.g. a person scoring higher on Introversion than Extraversion, Intuition than Sensing, Feeling than Thinking, and Judging than Perceiving would be classified as 'Introverted Intuitive Feeling Judging'). Scores are analysable either for each of the eight scales or more usually in terms of the four dimensions. The Myers-Briggs Indicator is very widely used in the business context; it has been the focus of extensive research and substantial evidence has accumulated suggesting the inventory has satisfactory validity and reliability (Furnham & Crump, 2005).

2) General mental ability. *Graduate and Managerial Assessment* (GMA:A; Blinkhorn, 1985). This is a timed (30 min) high level test of abstract reasoning ability, which measures the ability to think conceptually, to discover underlying patterns within a set of information, and to switch easily between contexts and level of analysis. The test is made up of 115 questions split into 23 groups of five questions. There are two different scoring methods, the Lenient score (GMA-L), which measures the total number of individual questions that are correct, and the Harsh score (GMA-H), in which a mark

is assigned for each group of questions answered correctly. The manual provides evidence of the test's reliability (alpha coefficients ranging from 0.83 to 0.92) and validity (correlation of 0.50 with Raven's Progressive Matrices; Blinkhorn, 1985). This is essentially a measure of fluid intelligence or intuitive insight.

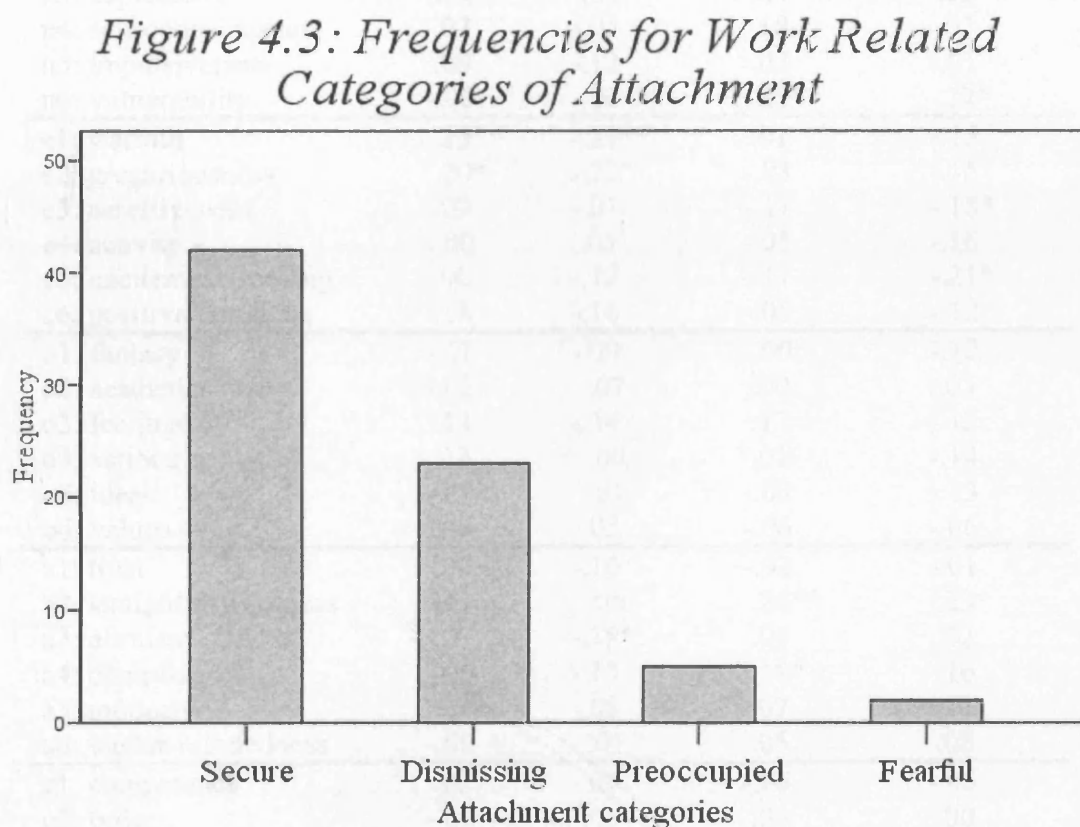
3) *Work Relationship Categories Questionnaire* (WRC). This bespoke measure of attachment at work was designed for this study. Modelled on the Relationships Questionnaire (RQ; Bartholomew & Horowitz; 1991), it consists of four paragraphs, each describing managerial behaviour corresponding to one of the four different attachment styles associated with the four category model of attachment, viz, secure, dismissing, preoccupied, fearful. (These paragraph descriptions may be found in the appendix - following Chapter 6.) Assessors (in this case the business psychologists from the firm that provided all of this study's data) rated for 'goodness of fit' of each description on a 6-point Likert-type scale. Although responses to the four descriptions were significantly inter-correlated, such that an overall component was identified, each of the descriptions was examined individually with regard to other measures (e.g., personality, ability, potential) in order to account for the four attachment categories. It should be noted that the existence of a general underlying component precluded application of the RQ algorithm (see Study 4) to score the WRC.

4) *Career potential*. This measure was developed by the consulting firm that provided these data. Ratings are constructed in accordance with an algorithm developed by the firm, which interrogates the assessor's judgement about the individual candidate (for the purposes of this study, participant) from interview and factors in the psychometric data obtained. Points on the scale are determined by a combination of

number of positive factors and absence of negative factors. The company trains for inter-rater reliability and conducts peer-reviews of all ratings (source: unpublished correspondence with a senior partner of the firm).

4.12 Results

Figure 4.3 depicts the distribution (frequencies) of participants who scored highest on each of the four categories, i.e., how many people could be classified as secure, dismissing, preoccupied or fearful.



Correlations

There were no significant attachment at work correlates of GMA or demographic variables.

Table 4.8
NEO-PI-R Correlates of Work Relationship Categories

	Secure	Dismissing	Preoccupied	Fearful
Neuroticism	.01	-.02	.24**	.08
Extraversion	.17	-.19*	-.09	-.24**
Openness to Experience	.04	-.04	.02	-.13
Agreeableness	-.02	-.11	.18	.18
Conscientiousness	-.05	-.03	.02	.05
n1: anxiety	-.03	.00	.21*	.16
n2: angry hostility	-.04	.11	.11	-.00
n3: depression	-.01	-.03	.24*	.02
n4: self-consciousness	.02	-.05	.18	.03
n5: impulsiveness	.09	-.12	.07	-.01
n6: vulnerability	-.00	-.06	.25**	.22*
e1: warmth	.25**	-.27**	.01	-.15
e2: gregariousness	.20*	-.22*	-.03	-.15
e3: assertiveness	.09	-.01	-.11	-.18*
e4: activity	-.00	.05	-.05	-.16
e5: excitement-seeking	.00	-.12	-.11	-.21*
e6: positive emotions	.18	-.16	-.06	-.12
o1: fantasy	-.01	-.09	-.00	-.12
o2: aesthetics	-.02	.07	.00	.03
o3: feelings	.14	-.14	.17	-.12
o4: actions	.13	.00	.01	-.14
o5: ideas	-.09	.01	-.03	-.13
o6: values	.06	-.05	-.06	-.06
a1: trust	.09	-.10	-.03	-.01
a2: straightforwardness	-.18	.06	.26**	.23*
a3: altruism	.07	-.18*	.08	.02
a4: compliance	-.06	-.15	.18*	.16
a5: modesty	.02	-.08	.07	.11
a6: tender-mindedness	-.00	.01	.05	.08
c1: competence	.07	-.09	-.06	-.05
c2: order	-.02	-.05	.08	.00
c3: dutifulness	-.02	-.07	-.00	.03
c4: achievement striving	-.07	.05	.13	.02
c5: self-discipline	-.00	-.07	-.11	-.04
c6: deliberation	-.14	.08	.05	.21*

Note: $N = 114$; * $p < .05$, ** $p < .01$ (r limit for $p < .05$ was .183, which explains why some, but not all, values of $r = .18$ are asterisked)

Correlations between the WRC measure of attachment and the NEO-PI-R are shown in Table 4.8. At the super-trait level, Neuroticism was positively correlated with preoccupied ($r = .24, p < .01$). Extraversion was negatively correlated with dismissing ($r = -.19, p < .05$) and fearful ($r = -.24, p < .01$).

At the primary-facet level, secure correlated significantly with e1 ($r = .25, p < .01$) and e2 ($r = .20, p < .05$); dismissing correlated significantly with e1 ($r = -.27, p < .01$), e2 ($r = -.22, p < .05$), and a3 ($r = -.18, p < .05$); preoccupied correlated significantly with n1 ($r = .21, p < .05$), n3 ($r = .24, p < .05$), n6 ($r = .25, p < .01$), a2 ($r = .26, p < .01$), and a4 ($r = .18, p < .05$); whilst fearful correlated significantly with n6 ($r = .22, p < .05$), e3 ($r = -.18, p < .05$), e5 ($r = -.21, p < .05$), a2 ($r = .23, p < .05$), and c6 ($r = .21, p < .05$).

Table 4.9
MBTI and HDS Correlates of Work Relationship Categories

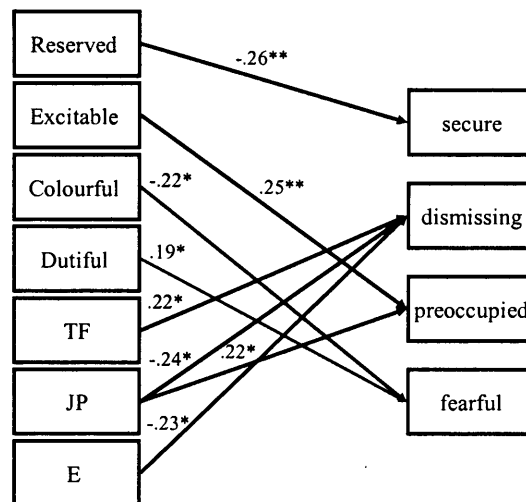
	secure	dismissing	preoccupied	fearful
EI	-.00	.07	-.13	.02
SN	-.00	-.05	.17	-.06
TF	-.13	.19*	.09	.04
JP	.09	-.21*	.21*	.02
Excitable	-.11	.02	.27**	.06
Sceptical	-.01	-.04	.17	.07
Cautious	-.04	-.03	.24**	.11
Reserved	-.23*	.13	.20*	.15
Leisurely	-.02	-.00	.13	.07
Bold	.07	-.06	-.03	-.16
Mischievous	.11	-.12	-.11	-.19*
Colourful	.20*	-.20*	-.06	-.26**
Imaginative	-.05	.00	.01	-.17
Diligent	-.04	-.07	.13	.11
Dutiful	-.06	.00	.04	.19*

$N = 114$; * $p < .05$, ** $p < .01$ EI = Extraversion/Introversion, SN = Sensing/Intuition, TF = Thinking/Feeling and JP = Judging/Perceiving.

Correlations between attachment at work and the MBTI and HDS are presented in Table 4.9. As can be seen, TF was positively correlated with dismissing ($r = .19, p < .05$).

.05), whereas JP was negatively correlated with dismissing ($r = -.21, p < .05$) and positively with preoccupied ($r = .21, p < .05$). Excitable was positively correlated with preoccupied ($r = .27, p < .01$); Cautious was positively correlated with preoccupied ($r = .24, p < .01$); Reserved was negatively correlated with secure ($r = -.23, p < .05$), and positively with preoccupied ($r = .20, p < .05$); Mischievous was negatively correlated with fearful ($r = -.19, p < .05$); Colourful was positively correlated with secure ($r = .20, p < .05$), and negatively with dismissing ($r = -.20, p < .05$) and fearful ($r = -.26, p < .01$); Dutiful was positively correlated with fearful ($r = .19, p < .05$).

Figure 4.4: Personality Predictors of Attachment



Note: $N = 114$; * $p < .05$; ** $p < .01$; Q1 to Q4 = four questions from Attachment questionnaire; E = Extraversion; TF = Thinking/Feeling and JP = Judging/Perceiving. All coefficients are standardized Betas from stepwise

Stepwise regressions A series of stepwise regressions were then conducted to test the comparable predictive validity of different personality factors (NEO-PI-R, MBTI, and HDS) with regard to the attachment at work descriptions. As depicted in Figure 4.4, Reserved personality significantly predicted secure ($\beta = -.26, t = 2.77, p < .01$); Excitable

personality significantly predicted preoccupied ($\beta = .25$, $t = 2.78$, $p < .01$); Colourful personality significantly predicted fearful ($\beta = -.22$, $t = 2.36$, $p < .05$); Dutiful personality significantly predicted fearful ($\beta = .19$, $t = 1.99$, $p < .05$); TF significantly predicted dismissing ($\beta = .22$, $t = 2.42$, $p < .05$); JP significantly predicted dismissing ($\beta = -.24$, $t = 2.68$, $p < .05$) and preoccupied ($\beta = .22$, $t = 2.45$, $p < .05$); Extraversion significantly predicted dismissing ($\beta = -.23$, $t = 2.50$, $p < .05$).

Career potential: Career potential was positively correlated with secure ($r = .29$, $p < .01$) and negatively with dismissing ($r = -.23$, $p < .05$), preoccupied ($r = -.20$, $p < .05$), and fearful ($r = -.26$, $p < .01$) attachment at work. In addition, ANOVA revealed that there were significant job level-related differences in preoccupied attachment scores ($F(2, 109) = 4.09$, $p < .01$); specifically, LSD post-hoc comparisons showed that technical professionals, i.e., non-managers, had significantly higher preoccupied attachment at work scores than both their managerial/supervisory and manager of managers counterparts.

Hierarchical regression was conducted to test the incremental validity of attachment at work (over and above personality and ability) as predictors of Career potential. Only the significant correlates of Career potential were entered, using a stepwise method (in models 1, 2, and 3). In the fourth model, attachment factors were included as predictors. The results, summarised in Table 4.10, show that adding the attachment at work factors as predictors of Career potential increased the amount of variance accounted for from 31% (which was explained by GMA, Extraversion, and Dutiful) to 41%. Thus, the business psychologists' assessment of attachment at work explained a unique and additional 10% of the variance in Career potential. In the final

model, there were three significant single predictors, namely GMA ($\beta = .44$, $t = 4.41$, $p < .01$), Dutiful ($\beta = -.25$, $t = 2.40$, $p < .05$), and preoccupied attachment at work ($\beta = -.21$, $t = 1.94$, $p < .05$).

Table 4.10

Incremental Validity: Summary of Hierarchical Regression Analyses Predicting Career Potential

Method	Variables	r	AdjR ²	R ²	df	ΔF	(step 2)		(step 3)		(step 4)		t
							β	SE	β	SE	β	SE	
1 stepw			.16	.17	1, 64	13.24**							
	GMA	.33**					.41	.02					3.63**
2 stepw			.23	.25	2, 63	10.54**							
	GMA	.33**					.44	.03					4.02**
	Dutiful	-.29**					-.28	.02					2.58*
3 stepw			.27	.31	3, 62	9.12**							
	GMA	.33**							.43	.04			4.06**
	Dutiful	-.29**							-.26	.02			2.39*
	E	.32**							.24	.08			2.23*
4 multip			.33	.41	7, 58	5.68**							
	GMA	.33**									.44	.04	4.31**
	Dutiful	-.29**									-.25	.04	2.40*
	E	.32**									.16	.05	1.57
	Secure	.29**									.10	.08	.73
	Dismiss	-.23*									-.11	.07	.77
	Preoccu	-.20*									-.21	.04	1.94*
	Fearful	-.26**									-.06	.06	.57

Note $N = 66-101$. In all steps criterion variable was Career potential; GMA = cognitive ability; E = Extraversion (NEO); Dismiss = dismissing; Preoccu = preoccupied; * $p < .05$, ** $p < .01$; all β values are standardised; r = bivariate Pearson correlation coefficient

4.13 Discussion

For a newly developed categorical measure to account for an additional 10% of the variance in a commercially valuable construct, such as career potential, beyond the variance explained by well established psychometrics that are in everyday business use,

is, on the face of it, an unexpectedly favourable result. In evaluating this result, it should be noted that the assessors who completed this questionnaire were in this instance the same business psychologists who rated individuals' career potential. Moreover, as the description of the Career potential measure makes clear, ratings on *that* measure were explicitly influenced by participants' GMA scores and their results on the personality measures (see the description of Career potential, in the method section). Under the circumstances, the independence of these measurements (as distinguished from associations amongst the constructs these measures were designed to tap) was evidently jeopardised. Moreover, the methodology utilised for analysing WRC ratings was non-standard; as noted in the method section, the distribution of ratings combined with relatively small sample size precluded analysis as is normally performed with RQ data (e.g., Griffin & Bartholomew, 1994). Results of this study are therefore best viewed with caution. Nonetheless, these findings certainly demonstrate the need for further research concerning the predictive validity of attachment at work. Such investigation should, moreover, include further applications using categorical as well as continuous measures of attachment, and obtaining others' as well as self-assessments.

Overall, WRC ratings suggest that the distribution of attachment orientations in this participant sample conforms to the distribution generally found in mainstream, non-clinical attachment research, with more than half of the participants categorised as primarily 'secure' (see Figure 4.3). However, as primary attachment categories could be assigned to only two thirds of the sample, and as fewer than half of these received primary ratings in the insecure attachment categories, within this relatively small overall sample, diminished sub-sample sizes became a constraint. Nonetheless, findings

regarding associations between attachment and the Big Five personality factors were generally in line with hypotheses, even though these hypotheses could not be fully confirmed.

Specifically, only one of the four attachment at work categories, preoccupied, showed a significant relationship with Neuroticism; this was in the predicted (positive) direction. A second insecure attachment category, fearful, was significantly associated with n6, vulnerability, also in the predicted direction. As predicted, a significant (negative) relationship was found between Extraversion and two insecure attachment categories, fearful and dismissing. The secure category showed no significant associations with any of the Big Five super-traits; its only significant correlations were with two sub-facets of Extraversion, e1, warmth, and e2, gregariousness. In both instances, however, these were in the predicted (positive) direction. Likewise, dismissing was significantly associated with a3, altruism, in the predicted (negative) direction. In addition, fearful was associated (positively) with c6, deliberation. There were no correlations between any of the attachment at work categories and Openness or any of its subfacets. This almost complete absence of associations between either Openness or Conscientiousness and attachment at work may be a reflection of the limits of the categorical measure of attachment at work employed, or of sample characteristics, or both.

Significant associations were found between two insecure attachment orientations and two MBTI dimensions. Dismissing was positively associated with the Thinking side of the Thinking—Feeling pole. As individuals with this attachment orientation would be expected to be dismissing of feelings about attachment, and as Thinking in MBTI terms

refers to the inclination to take an apparently logical, objective stance, this association makes sense. Likewise, a preoccupied stance in relation to attachment would seem likely to be associated with a preference for certainty, including about attachment relationships, as the Judging preference of this MBTI scale connotes, whereas individuals with a dismissing orientation to attachment might well prefer to keep their options open, as preference for the Perceiving end of this same MBTI scale indicates.

Associations between the HDS scales and attachment at work are of particular interest. The Hogan manual's descriptions for the scales that were associated with and in some instances found to predict attachment style variables read as plausible descriptions of the respective attachment styles (or, where relevant, of their 'negatives'). In other words, the findings make intuitive sense. For example, as depicted in Figure 4.4, HDS Reserved, which "concerns seeming socially withdrawn and lacking interest in or awareness of the feelings of others," significantly (negatively) predicted secure attachment at work. HDS Excitable, which "concerns seeming moody and inconsistent, being enthusiastic about new persons or projects and then becoming disappointed with them," significantly predicted preoccupied attachment. HDS Colourful, which "concerns seeming expressive, dramatic, and wanting to be noticed," significantly and negatively predicted fearful attachment. HDS Dutiful, which "concerns seeming eager to please, reliant on others for support, and reluctant to take independent action," significantly and positively predicted fearful attachment. Further investigation of associations between attachment at work and the Hogan scales is clearly warranted.

This study's findings of all statistically significant personality predictors of attachment at work are presented in Figure 4.4, which displays statistical not causal

relationships. Overall, results of this study support the view, generally investigated in this thesis, that attachment operates at work as an identifiable construct that is related to but is not redundant with established and well known personality constructs. Findings of this study also provide some support—although not as clearly as had the AAW also been administered—for the view that the aforesaid continuous measure is a more sensitive measure of attachment at work than the bespoke ‘assessor’ measure employed herein. For this thesis, the studies that follow will return to use of the AAW. It should be noted, however, that at least until the AAW has been fully validated and sufficiently widely used for population norms to be established, it cannot be used to fulfil the need for individual diagnostic assessment of attachment orientation at work.

Chapter 5: Attachment at Work: Its Incremental Predictive Validity vis a vis Job Satisfaction and Job Performance

5.1 Introduction

Attachment theory (e.g. Bowlby, 1969/82; 1973; 1980) posits that attachment is at root a biologically based survival instinct, that attachment-related expectations are formed from early experiences of caregiver responses, that these expectations take hold cognitively and are manifest in patterns of behaviour categorisable, writ large, as reflective of a secure or insecure internal working model of attachment, that attachment is life-spanning, and that attachment orientation, once formulated, is not immutable but is self-reinforcing. The extent to which attachment orientation may change in adults, and the causes of such change, are matters of debate and of investigation by some attachment researchers (e.g., Kobak et al, 2004; Sroufe et al, 2005). Hazan and Shaver (1987) conceptualised romantic partnerships as forms of attachment bonds, and then (ibid, 1990) suggested that, for adults, work could be conceptualised as the functional counterpart, for the exploratory behavioural system, to play for children. A modicum of empirical research has been conducted, since, investigating the relationship between attachment orientation, or style, and various work-related variables. For the most part, such research has assessed attachment as if it were a stable trait, and although theoretical and empirical work on adult attachment over more than a decade has increasingly pointed to a nested hierarchy of internal working models of attachment, from global to context-specific or relationship-specific (e.g. Collins & Read, 1994, Overall et al, 2003), studies on attachment and work have tended to rely upon extant measures of attachment originally designed to assess attachment in the context of romantic partnerships or other close, personal relationships (e.g., Schirmer & Lopez, 2001).

For this thesis, in a series of studies described in the previous chapters, a new attachment at work measure (AAW) was tested for construct validity (Studies 1 and 2), concurrent validity (Studies 2 and 4), and discriminant validity (Studies 3 and 4). Participants were in all cases organisational employees and in many cases were managers, and instructions for completing the questionnaire, as well as the items themselves, invited its completion with their current (or, for Study 4, most recent) work context in mind. In addition to instrument validation, these studies thus permitted some investigation into the operation of the attachment behavioural system—as distinguished, for example, from the sociable behavioural system—in the workplace *in particular*.

In the fifth study in this series, in addition to examining associations between attachment at work and various personality measures, a measure of participants' on-the-job potential was obtained, with a view toward conducting a preliminary investigation of the relationship between attachment at work and performance potential. Although in that instance this particular line of inquiry was restricted due to measurement and sample size limitations, it was deemed of sufficient importance from both theoretical and practical perspectives to warrant further pursuit. Therefore, the two studies that follow have been designed primarily as investigations of the incremental predictive validity of attachment at work. These studies revert to use of the AAW questionnaire to assess attachment at work.

Study 6

5.2 Study 6 Introduction

This study continues to assess the construct validity of a new self-report measure of adult attachment at work (AAW), and aims to replicate previous findings regarding associations between the AAW and well established measures of personality and individual differences. In addition, and in particular, this study endeavours to investigate the relationship between the aforesaid variables and a set of three previously validated self-report measures of various aspects of work gratification, and to determine what if any particular contribution to this overall relationship is made by AAW. Finally, this study introduces a short self-report measure concerned with the experience of recent trauma and loss, with a view toward initiating investigation of one factor cited in the adult attachment literature as having a substantive bearing on attachment orientation, that is, unresolved loss or trauma (e.g., Hesse, 1999; Kobak et al, 2004).

Hypothesis 1. Principal Component Analysis of the Attachment at Work (AAW) inventory will identify two distinct factors. Examination of the items loading on each factor will support the view that, as in previous attachment at work studies, the two factors correspond with 'secure,' and 'insecure' attachment styles at work, respectively (see Studies 1-4).

Hypothesis 2, actually a set of hypotheses, predicts associations between personality and attachment at work. In the previous five studies, associations discovered by Shaver and Brennan (1992) between the Big Five personality traits and romantic attachment dimensions were examined in relation to attachment at work. In particular, in two of these studies (Studies 3 and 4), incremental validity of the AAW in relation to

personality was investigated using the long-form NEO-PI-R (Costa & McCrae, 1992). Associations reported in the original romantic attachment research tended to be replicated in those AAW studies, and are expected to be so again, here. Specifically, it is predicted that: H2a: Neuroticism will be significantly negatively correlated with secure attachment style at work and positively correlated with insecure attachment at work. H2b: Extraversion will be significantly positively correlated with secure attachment style at work and negatively with insecure attachment at work. H2c: Agreeableness also will be significantly positively correlated with secure attachment at work, and negatively with insecure attachment at work. Although no significant associations were reported between the remaining two personality traits (Openness to Experience and Conscientiousness) and romantic attachment dimensions (Shaver & Brennan, *ibid*), associations were found in the previous attachment at work studies, and are predicted, here. Specifically, H2d: Openness will be significantly positively correlated with secure attachment at work, and negatively with insecure attachment at work. H2e: Conscientiousness will be significantly positively correlated with secure, and negatively with insecure attachment at work.

H3. As in previous attachment at work studies, self esteem is predicted to be significantly associated with secure (positively) and insecure (negatively) attachment at work.

H4. In accordance with theory and empirical research (e.g. Hesse, 1999; Kobak et al, 2004) recent experience of loss or trauma is predicted to be significantly associated with insecure attachment. As noted in Chapters 1 and 2, research on attachment in the developmental psychology tradition endeavours to take into account the impact of trauma

or loss of an attachment figure on attachment orientation. For example, the AAI, (George et al, 1986) has a coding category specifically for cases where attachment-related trauma or loss experiences are viewed as being unresolved. Likewise, clinicians have identified a link between unresolved trauma in adults and dysfunctional caregiving that fosters insecure attachment in their offspring (e.g., Kobak et al, 2004). For adults, recent experience of trauma or loss might serve as markers of developmental ‘nodes’ (Sroufe et al, 2005).

Finally, H5. Work gratification, a factor that underlies three measures described in the method section that follows, is predicted to be significantly and positively associated with secure, and negatively with insecure attachment at work.

5.3. Method

Participants and procedure

One hundred and fifteen (44 male and 71 female) adults, aged 28 to 75 ($M = 49.7$, $SD = 9.1$) years, took part in this study. Seventy percent were married, 11% single, 10% living together, and 9% divorced or separated. Twenty four percent worked in a private sector service company, 21% in the public sector (but not a government agency or emergency services), 14% were self-employed, 11% worked for a government agency, 10% worked for emergency services, 10% worked for a charity or in the voluntary sector, 6% worked for a private sector manufacturer, 4% worked in academia or education

Surveys were disseminated through the website of a nonprofit organisation, Aha!, that regularly invites its associates to engage voluntarily in survey research, through distribution to attendees at various management seminars, through colleagues and friends,

and their associates, and through a network of professional women approached specifically to increase the number of female managers in this sample (as a counterpart to the Study 4 sample). All questionnaires were completed voluntarily and anonymously and were returned through the post. Aggregate feedback was offered, in the form of a talk organised via the nonprofit organisation, and another to the women's network.

Measures

Attachment. As in study 1.

Personality. As in study 1.

Self esteem. As in study 3.

Trauma and Loss. A simple, two item measure of recent and potentially unresolved loss or trauma was built into this survey. Specifically, individuals were asked to rate, on a 7 point Likert-type scale, the extent to which they agreed or disagreed with the statements, "I have recently experienced a significant personal loss or trauma;" "I feel unresolved about a trauma or personal loss in my past."

Work gratification. From a compendium of established measures utilised in organisational research (Cook et al, eds., 1981) three measures were included that assess variables thought to contribute to the extent to which individuals perceive their work as personally gratifying. For this study, these three were intended to serve as outcome measures, thus enabling investigation of the predictive validity of the AAW:

Job satisfaction refers to employees' overall affective responses to their jobs and was operationalised via three items from the Michigan Organizational Assessment Questionnaire (MOAQ) (Cammann, Fichman, Jenkins & Klesh, 1979; Seashore, Lawler, Mirvis and Cammann, 1982). These were "All in all, I am satisfied with my job", "In

general, I don't like my job" (Reversed), and "In general, I like working here." Items were responded to on a 7-point Likert-type scale ranging from strongly disagree (1) to strongly agree (7). For the present sample the Cronbach α was .84.

Job involvement is defined as the extent to which individuals' personally identify with their work and was assessed via three items from the MOAQ, namely "I am very much personally involved in my work," "I live, eat, and breathe my job," and "The most important things that happen to me involve my job." These were answered, as above, on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). For the present sample the Cronbach α was .67, which is in line with the usual internal consistency reported by the authors.

Internal work motivation, a.k.a. *Intrinsic motivation*, is defined in terms of the extent to which doing the job itself is rewarding. It was also assessed via the MOAQ, and included the following three items: "I feel bad when I do a poor job," "I get a feeling of personal satisfaction from doing my job well," and "Doing my job well gives me a good feeling." Again, responses ranged from 1 (strongly disagree) to 7 (strongly agree). For the present sample the Cronbach α was .73, which is higher than the internal consistency reported by the authors.

5.4 Results

Data Reduction

Principal component analysis (PCA) was performed on the data to identify the underlying structure of the AAW inventory. As in previous studies, two main components were identified and labelled Insecure Attachment at Work (IAW) (Eigenvalue = 2.91, variance = 26.1%, α = .74) and Secure/Autonomous Attachment at

Work (SAAW) (Eigenvalue = 2.26, variance = 18.3%, $\alpha = .74$). Direct Oblimin rotation was used. Factor loadings for the 16 retained items are shown in Table 5.1.

Table 5.1: Factor loadings after PCA of 18 items of AAW

	IAW	SAAW
5) I often worry that my colleagues do not really trust me	.67	
6) I find work colleagues reluctant to be as open as I would like	.67	
17) Often, work colleagues want me to be more open than I feel comfortable being	.62	
4) Top management is never there when you need them	.61	-.34
16) I find it difficult, in the workplace, to trust others completely	.61	
18) I often feel that I'm on my own in this company	.59	
11) I often worry that people will not want to stay on my work team	.51	
13) Work colleagues are sometimes put off by my desire to be on their wavelength	.49	
15) I can count on work colleagues to support me when I need them		.73
7) I am comfortable depending upon others at work		.72
3) I find it difficult to allow myself to depend upon others at work (R)		-.59
9) I am somewhat uncomfortable depending upon others at work (R)	.32	-.56
1) I find it relatively easy to get close to others at work		.40
2) I do not often worry about being left in the lurch at work	-.30	.38
8) I do not often worry about someone confiding too much to me at work		.39
14) I am comfortable having others depend on me at work		.33
<i>Cronbach's α</i>	.74	.69
<i>Eigenvalue</i>	2.91	2.26
<i>Variance accounted for (%)</i>	26.1%	18.3%

Note: $N = 115$; Extraction Method: Principal Component Analysis. Rotation Method: Direct Oblimin with Kaiser Normalization. Cross-loadings smaller than .30 are not shown.

Correlations

Next, bivariate and partial correlations were computed in order to test the relationship between the two attachment factors and personality traits, self esteem, job satisfaction, job involvement, and intrinsic motivation. As seen in Table 5.2, SAAW and IAW were negatively inter-correlated ($r = -.53, p < .01$). SAAW was negatively correlated with Neuroticism ($r = -.34, p < .01$), and positively correlated with Extraversion ($r = .31, p < .01$), Conscientiousness ($r = .21, p < .05$), self esteem ($r = .38, p < .01$), and job satisfaction ($r = .46, p < .01$). IAW was positively correlated with Neuroticism ($r = .43, p < .01$), and negatively correlated with Extraversion ($r = -.21, p < .05$), Agreeableness ($r = -.24, p < .01$), self esteem ($r = -.42, p < .01$) and job satisfaction ($r = -.50, p < .01$).

When self esteem was controlled for, the correlation between both attachment factors and other variables tended to decrease. Although SAAW (positively) and IAW (negatively) both remained significantly correlated with job satisfaction, controlling for self esteem reduced these correlations from high to moderate. Personality and self esteem were significantly correlated with job satisfaction. In some cases, when attachment was controlled for, these correlations became non-significant. For example, the bivariate correlation between Openness and job satisfaction was $r = .20, p < .05$; controlling for IAW reduced this correlation to $r = .17, p > .05$. The same was true for the correlation between Agreeableness and job satisfaction ($r = .20, p < .05$ bivariate, reducing to $r = .15, p > .05$ when controlling for SAAW, and to $r = .09, p > .05$ when controlling for IAW).

Table 5. 2: Inter-correlations among Attachment, Personality, Self esteem and Job satisfaction

Controlling for		2	3	4	5	6	7	8	9	10	11
1 SAAW		-.53**	-.34**	.31**	.02	.14	.21*	.38**	.46**	.15	.17
	SE		-.13	.20*	-.06	.14	.12	----	.34**	.09	.14
2 IAW		----	.43**	-.21*	-.09	-.24**	-.08	-.42**	-.50**	-.07	-.07
	SE		.22*	-.07	-.01	-.25**	.03	----	-.37**	-.10	-.03
3 N			----	-.37**	-.25**	-.08	-.26**	-.64**	-.54**	-.19*	-.10
	SAAW								-.45**	-.15	-.05
	IAW								-.41**	-.23*	-.08
4 E				----	.40**	.30**	.35**	.35**	.32**	.35**	.20*
	SAAW								.21*	.32**	.16
	IAW								.25**	.37**	.19*
5 O					----	.18	.08	.20*	.20*	.23*	.16
	SAAW								.21*	.22*	.16
	IAW								.17	.23*	.16
6 A						----	.32**	.03	.20*	.02	.25**
	SAAW								.15	.05	.23*
	IAW								.09	.03	.24**
7 C							----	.26**	.30**	.22*	.35**
	SAAW								.24*	.20*	.32**
	IAW								.30**	.23*	.34**
8 S e								----	.49**	.19*	.09
	SAAW								.39**	.14	.03
	IAW								.36**	.24**	.07
9 JS									----	.27**	.30**
10 JI										---	.27**
11 IM											---

$N = 115$. S e = Self esteem, JS = Job Satisfaction, JI = Job Involvement, IM = Intrinsic Motivation, SAAW = secure/autonomous attachment at work; IAW = insecure attachment at work; N = Neuroticism; E = Extraversion; O = Openness to Experience; A = Agreeableness; C = Conscientiousness

Attachment factors were not significantly correlated with either job involvement or intrinsic motivation. The correlation between Neuroticism and job involvement dropped from $r = -.19, p < .05$ (bivariate) to $r = -.15, p > .05$ (controlling for IAW), whilst the correlation between job involvement and self esteem dropped from $r = .19, p < .05$ (bivariate) to $r = .14, p > .05$ (controlling for SAAW). Similar patterns were found for the

correlations between IM and Extraversion, which, when SAAW was controlled for, dropped to non-significant.

In addition, recent trauma or loss experience (not shown in Table 5.2) was found to be significantly correlated with Neuroticism ($r = .30, p < .01$), self esteem ($r = -.34, p < .01$), SAAW ($r = -.27, p < .01$), and IAW ($r = .23, p < .05$).

Regressions

Finally, hierarchical regression analysis was used to test the incremental validity of attachment (over and above personality and self esteem) as a predictor of the work gratification measures used in this study. To this end, an overall composite was extracted, via PCA, from the common variance underlying job satisfaction, job involvement, and intrinsic motivation. The overall factor, labelled work gratification, had an Eigenvalue of 1.56 and accounted for 52% of the variance. Results are summarised in Table 5.3. In step 1, Neuroticism, Conscientiousness and self esteem, which were the significant correlates of work gratification, accounted for 11% of the variance, though only Neuroticism was a significant predictor in this model. When attachment factors were added in step 2, the percentage of variance accounted for increased to 22%; in other words attachment orientation explained an additional 11% of the variance in work gratification. The only significant predictor of this model was IAW.

Table 5.3: Incremental validity: Summary of Regression Analyses Predicting Work Gratification

Step	Variables	r	ΔR^2	R^2	df	ΔF	(step 1)		(step 2)		t
							β	SE	β	SE	
1			.11	.11	3, 107	4.57**					
	N	-.30**					-.21	.04			1.74*
	C	.22*					.15	.05			1.54
	Self esteem	.25*					.08	.02			.66
2			.11	.22	5, 105	7.19**					
	N	-.30**							-.11	.04	.92
	C	.22*							.15	.03	1.70
	Self esteem	.25*							.08	.01	.22
	SAAW	.33**							.11	.03	1.05
	IAW	-.41*							-.31	.03	2.81**

Note: N = 110-115. SAAW = secure/autonomous attachment at work; IAW = insecure attachment at work; N = Neuroticism; C = Conscientiousness.

5.5 Discussion

Overall, predictions about attachment at work were confirmed. All but two AAW items (one for each factor) once again loaded on to the same two factors as previously (see Studies 1-4), and these two factors were associated, as predicted and as previously found, with both personality and self esteem. Although the predicted association between SAAW and Agreeableness did not reach significance, findings were in the predicted direction; all of the other associations between attachment and the three 'Big Five' traits found in earlier romantic attachment research (e.g., Shaver & Brennan, 1992) were found, here. This is particularly encouraging given the relatively small sample size and the use of the shorter form personality measure (NEO-FFI, Costa & McCrae, 1992). Significant associations were not found, in this instance, between attachment and Openness, but SAAW and Conscientiousness were associated as predicted, a particularly important finding, given the overall focus of this research, and in the light of the general recognition

and use of Conscientiousness by organisational psychologists as a job performance indicator (Salgado, 1997).

Correlational analyses in this instance included controlling for variables that might account for associations between others, a means of exploring and clarifying the likely interplay amongst these variables. So, for example, self esteem was shown to contribute to the strength of the respective correlations between each of the attachment factors and job satisfaction but, importantly for our overall investigation, even when self esteem was controlled for these correlations remained significant. Likewise, controlling for attachment at work demonstrated the extent of its contribution to associations between other variables under study, such that, for example, when SAAW was controlled for, the correlation between Agreeableness and job satisfaction dropped to non-significant. Overall, the pattern of correlational findings tells a compelling story about the influence of attachment orientation at work in relation to individual differences and aspects of work gratification. Indeed the predictive validity of work gratification virtually doubled (from 11% to 22%) when attachment at work was included in the model. In this instance, IAW was the sole predictor; replication research would be valuable to explore whether and how this might vary in other samples.

In conclusion, it is worth just noting study findings concerning the relationship of recent trauma and loss to attachment. As the primary purpose of this study was to investigate the predictive validity of the AAW, this 'subplot' focus on loss could be seen as a distraction from that pursuit. Recall, however, that the underlying theory upon which all of these studies draw is a developmental theory, rooted in part on the impact of separation from and loss of attachment figures on individuals' expectations about and

orientation toward attachment (Bowlby, 1951), and first operationalised in terms of toddler's responses to separation (Ainsworth et al, 1978). Whilst this thesis is principally devoted to validation of a measure of adult attachment in the workplace, subsequent use of that measure will be most likely to contribute to the field of attachment only if the research in which it is employed retains a focus on the developmental aspects attachment. To that end, the preliminary finding, in this study, that recent loss is associated with insecure attachment, as predicted, is worth knowing, and warrants further investigation. An attempt will be made to replicate this finding in the study that follows. Implications will be further discussed in the final chapter of this thesis.

Study 7

5.6. Study 7 Introduction

This is the seventh in a series of studies concerned with attachment at work, and in particular with validating a self-report measure of adults' attachment styles in the workplace (AAW). The rationale for this research and descriptions of this measure and of the romantic attachment questionnaire from which it was adapted have been provided in earlier chapters of this thesis (see, for example, Chapter 1 and Study 1). Although a three factor solution was originally predicted (see Study 1), in all of the prior studies a two factor solution was consistently found. These two factors have been labeled SAAW (Secure Attachment at Work) and IAW (Insecure Attachment at Work).

A meta-analysis of then extant self-report measures of adult attachment identified two dimensions underlying attachment, associated, respectively, with anxiety and avoidance (Brennan et al, 1998). Shaver & Mikulincer have reported a growing consensus amongst attachment researchers in the social psychological and personality traditions as regards these two dimensions (ibid, 2004). In two concurrent validity studies, utilising two attachment measures originally developed for application in the context of close personal relationships, a straightforward alignment of the AAW's two factors with these two dimensions was not discovered (see Studies 2 and 4). Therefore, in the current study the original, 18 item AAW inventory was supplemented with 12 additional items drawn from the attachment literature specifically because they had elsewhere been found to differentiate between the two types of insecure attachment associated with these two dimensions (Hazan & Shaver, 1990; Sroufe, 2005). It was thought that, should the IAW be tapping into both types of attachment insecurity due to

flawed instrumentation, these additional items would increase the inventory's precision and so enable differentiation between these two hypothesised factors. Hypothesis 1: Principal Component Analysis of the Adult Attachment at Work (AAW) inventory will identify distinct factors. H1a: Examination of the items loading onto each factor will reveal that two of these factors are consistent with findings in prior studies, corresponding, respectively, with 'secure' and one of the two main types of 'insecure' styles of attachment at work (anxious or avoidant). Hypothesis 1b: A third factor will correspond with the other main 'insecure' style of attachment at work (avoidant or anxious).

The current study aims to replicate associations between attachment and personality originally found in research on romantic attachment (e.g., Shaver & Brennan, 1992), and in earlier attachment at work studies. Specifically, it is predicted that: H2a: Neuroticism will be significantly negatively correlated with secure attachment style at work. H2b: Extraversion will be significantly positively correlated with secure attachment style at work. H2c: Agreeableness also will be significantly positively correlated with secure attachment at work.

Notably, although Shaver and Brennan (1992) reported at most a small association between attachment styles and Conscientiousness (*ibid*, p.543), in a more recent investigation of the relationship between attachment dimensions and what are currently the most complete and frequently used measures of the Big Five, Nettle and Shaver (2006) have reported finding significant negative correlations between Conscientiousness and both attachment anxiety and avoidance. Findings reported in the previous studies in this thesis indicate that, in the workplace, attachment and Conscientiousness are

significantly intercorrelated, such that SAAW predicts higher Conscientiousness than does IAW (see for example Study 3). Conscientiousness is now widely recognised by business psychologists as a performance indicator (Salgado, 1997; Schmidt & Hunter, 1998); therefore, this study further explores the relationship between attachment at work and Conscientiousness, to assess whether and how these two interact to predict job performance. From a practical point of view, it is important to determine whether, and to what extent, attachment at work makes a distinct contribution to the prediction of performance, versus for example simply overlapping with Conscientiousness. H3a: Conscientiousness will be significantly and positively related to secure attachment at work. H3b: Job performance will be significantly and positively related to secure attachment at work. H3c: Attachment will make an additional contribution to the prediction of performance, beyond that of personality.

The current study investigates attachment at work with a relatively homogenous set of managers, all employed within one work organisation. In the two previously reported attachment at work studies that involved participant samples drawn from a single organisation (Studies 3 and 5), only one afforded the opportunity to examine the relationship between attachment at work and self esteem (see Study 3). There, and in all but one of the other studies in this thesis, as attachment theory would predict (Bowlby, 1973), a significant relationship was found. (The partial exception to this is reported and discussed in Study 4.) H4: Self esteem will be significantly and positively related to secure attachment at work.

This study will aim to replicate findings from the previous study in this chapter, concerned with the relationship between recent loss, or trauma, and attachment

orientation at work (see Study 6). Specifically, H5: recent experience of loss or trauma is predicted to be significantly associated with insecure attachment.

Study 4 revealed trait emotional intelligence as a mediator of the relationship between attachment at work and personality. This finding seems likely to have considerable practical significance, and certainly warrants further investigation. H6: TEIQ will mediate the relationship between attachment at work and personality.

Although no significant associations were reported between romantic attachment dimensions and Openness to Experience, and the relationship between attachment at work and Openness to Experience has appeared variable in the series of studies presented herein, this personality trait remains of interest in mainstream organisational psychology research; no hypotheses are offered but statistical associations will again be examined.

Finally, demographic variables will also be examined with regard to AAW factors. Although no specific hypotheses are stated about these, it will be of interest to see whether the relationship between personality traits and demographic variables conform to findings in other attachment research.

5.7 Method

Participants and procedure

Participants were 211 (52% male; 96% White/Caucasian) employees from a well known international business in the hospitality industry. Age ranged from 25 to 60 ($M = 40.1$, $SD = 7.3$) years. Fifty one percent were married, 23% single, 17% living together, 6% divorced, and 1% widowed (2% unreported). Forty three percent of the sample had completed up to BSc/BA or equivalent; 21% were educated up to A-level, 15% to

GCSE/O-level, 9% held a Master's degree (MA/MSc/MBA or equivalent), and 10% had other technical or professional accreditation (2% unreported).

Questionnaires were distributed to 400 managerial employees in early March, 2006 via email, as an attachment to a message from the relatively new international head of Human Resources, inviting their participation in a 'leadership diagnostic' survey. Completed questionnaires were returned directly to UCL; individual respondents' anonymity was assured. Response rate was high, at over 50%. A centralised record of employee performance data was separately made available to the researcher; this proved to include data on 170 (52% male) participants who had completed the questionnaires. This sub-sample was virtually identical in demographic variables to the full sample. No significant demographic correlates of attachment were found in either the full or sub-sample.

Measures

Adult Attachment in the Workplace (AAW). Attachment at work was assessed using a purpose-designed scale consisting of the original 18-items used in previous studies (see Study 1) plus an additional 12 items drawn from the extant attachment literature, and thought to differentiate between different types of insecure attachment (Hazan & Shaver, 1990; Sroufe, 2005). These new items were adapted as necessary for application in the context of work, and were tested, as reported herein, in regards to the underlying structure of the scale. The additional items included here were intended to investigate the measure's ability to differentiate between what developmental psychologists have found to be the two most common categories of insecure attachment, anxious-ambivalent (a.k.a. preoccupied) and avoidant (e.g. Ainsworth et al, 1978), and some personality and social psychologists

have identified as two underlying dimensions of attachment, anxiety and avoidance. (For a recent discussion of these two relatively independent lines of attachment research, see for example Shaver & Mikulincer, 2004.)

Personality. As in Study 1.

Self esteem. As in Study 3.

Emotional intelligence. Trait emotional intelligence (TEIQ) was assessed via the *mini*-TEIQ scale, which is based on the 30-item version of TEIQ (Petrides & Furnham, 2000, 2003). The scale comprises 8-items (4 reversed) that assess participants' emotional self-efficacy or the extent to which they believe they can successfully identify and manage their own emotions as well as those of others. Participants respond on a 7-point scale.

Potential and Performance. Measures of potential and performance were obtained through assessment centres and managerial ratings. Potential was assessed on a three-point scale corresponding to relatively high potential, intermediate potential, and lower potential. Performance was assessed on a six-point scale that consolidated achievement ratings against objectives set in the context of business scorecards. Where performance measures had been obtained at two points in time, these ratings were combined to increase reliability ($\alpha = .68$).

Trauma and Loss. As in Study 6.

5.8 Results

Data Reduction: Structure of AAW

Initial data reduction was performed via Principal Component Analyses (PCA) to explore the underlying structure of the AAW inventory.

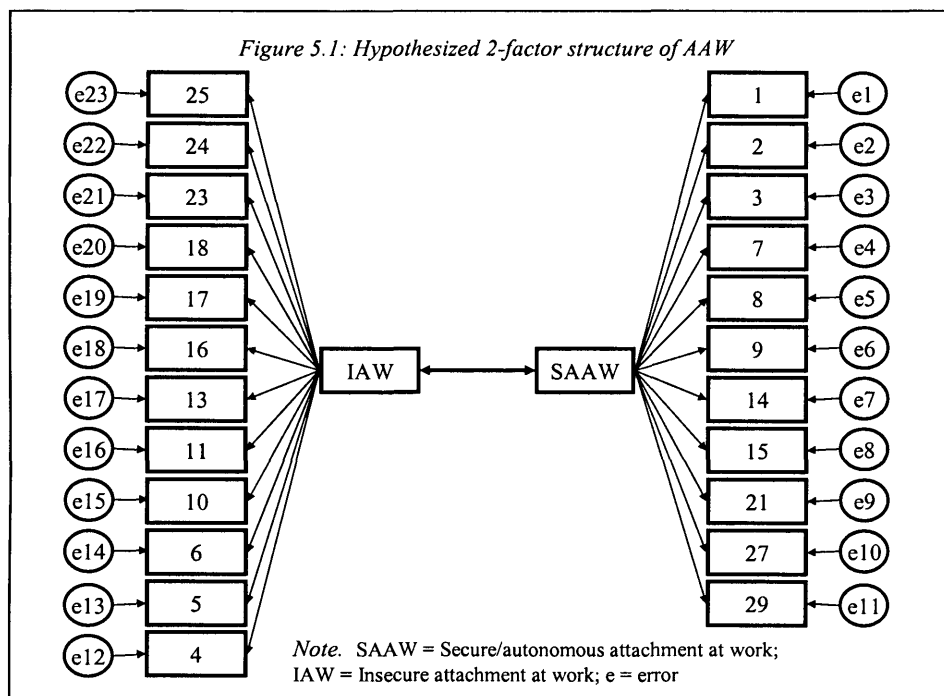
Table 5.4: Rotated component matrix and factor loadings following PCA of the AAW inventory

	SAAW	IAW
15) I can count on work colleagues to support me when I need them	.79	-.41
1) I find it relatively easy to get close to others at work	.69	
3) I find it difficult to allow myself to depend upon others at work (R)	.68	
7) I am comfortable depending upon others at work	.66	
9) I am somewhat uncomfortable depending upon others at work (R)	.65	
27) I am not good at first encounters (R) ^N	.59	
2) I do not often worry about being left in the lurch at work	.53	
29) I do not get easily frustrated at work ^N	.50	
21) I regularly seek advice from my colleagues ^N	.50	
14) I am comfortable having others depend on me at work	.43	
8) I do not often worry about someone confiding to much at work	.34	
24) My work efforts are misunderstood ^N	.	.79
18) I often feel that I'm on my own in this company		.74
5) I often worry that work colleagues do not really trust me		.73
4) Top management is never there when you need it		.69
16) I find it difficult, in the workplace, to trust others completely		.65
17) Often, work colleagues want me to be more open than I feel comfortable being	-.34	.63
6) I find work colleagues reluctant to be as open as I would like	-.32	.61
11) I often worry that people will not want to stay on my work team		.57
23) I have difficulty finishing projects and meeting deadlines ^N		.55
13) Work colleagues are sometimes put off by my desire to be on their wavelength		.53
25) Work interferes with relationships ^N		.53
10) I get nervous when anyone at work confides too much		.45
Eigenvalue for each factor	2.93	4.95
Cronbach α	.70	.75
Variance accounted for by each factor:	22.8%	28.7%

Note. $N=211$, Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization. ^N = new item; numbers to the left of the items correspond to the original item number in the questionnaire; (R) = reversed item; cross-loadings > .30 are reported; all loadings < .30 have been omitted for presentation clarity.

Despite inclusion of an additional 12 items that had been predicted to elicit a three factor solution, based on the results of the Scree test and Eigenvalues larger than 1.3, two oblique factors were extracted and rotated via Oblimin method with Kaiser normalization. Seventeen of the original 18 items showed high enough loadings to be included, and 6 of the new items also loaded onto the principal two factors. Factor 1 was once again

labelled “insecure attachment at work” (IAW), had an Eigenvalue of 4.95 and accounted for 28.7% of the variance, whilst factor 2 was labelled “secure/autonomous attachment at work”(SAAW), had an Eigenvalue of 2.93 and accounted for 22.8% of the variance. Thus the combined solution explained 51.5% of the variance. Items and loadings are reported in Table 5.4.



The 2-factor solution identified via PCA was next tested via confirmatory factor analysis (CFA) using LISREL 8 (Joreskog & Sorbom, 1993) to examine the fit of the model (shown in Figure 5.2) to the observed data. As recommended by Hoyle and Panter (1995), absolute fit indexes - χ^2 , goodness-of-fit (GFI), adjusted goodness-of-fit (AGFI), and comparative fit index (CFI)-were examined. Although the χ^2 value was significant, $\chi^2 (229, N = 211) = 337, p < .01$, the comparative and adjusted fit indexes revealed good fit, i.e., AGFI = .96, CFI = .93, and the GFI was acceptable, i.e., .95. Thus secure (11

items) and insecure (12 items) attachment scores were computed via simple addition and retained for further validation analyses.

Correlational Analyses

Descriptive statistics (*M* and *SD*), internal consistencies (Cronbach's α) and inter-correlations (Pearson's *r*) for all main measures are presented in Table 5.5.

Table 5.5: Inter-correlations Among Primary Variables

Variable	Variable											
	<i>M</i>	<i>SD</i>	α	1	2	3	4	5	6	7	8	9
1 Secure	59.6	7.9	.70		-.48**	.32**	.55**	-.25**	.48**	.11	.19*	.23**
2 Insecure	31.2	8.6	.75	-.29**		-.35**	-.52**	.38**	-.40**	.02	-.36**	-.34**
3 Se	40.5	8.3	.82	.02	-.59**		.51**	-.57**	.33**	.11	.11	.29**
4 TEIQ	45.3	5.3	.70	.25**	-.12			-.46**	.60**	.11	.21**	.38**
5 N	13.4	6.8	.82	-.28**	.02				-.37**	-.02	-.06	-.26**
6 E	33.6	5.7	.77	.15	.03					-.02	.17*	.32**
7 O	25.1	5.5	.65	.07	.24**						-.09	-.25**
8 A	32.0	5.1	.68	.13	-.03							.22**
9 C	37.7	5.4	.82	.10	.10							

Note: Values below the diagonal represent the Pearson's bivariate correlation coefficients from Neustadt, Chamorro-Premuzic, & Furnham (in press) based on $N = 117$ and similar measures of the same constructs. For the present study (above the diagonal) $N = 211$. Se = Self esteem; TEIQ = Trait emotional intelligence; N = Neuroticism, E = Extraversion, O = Openness to Experience, A = Agreeableness, C = Conscientiousness* $p < .05$, ** $p < .01$.

As seen, correlates of attachment were consistent with initial predictions. Thus SAAW and IAW were negatively inter-correlated ($r = -.48$, $p < .01$). SAAW correlated positively with self-esteem ($r = .32$, $p < .01$), TEIQ ($r = .55$, $p < .01$), Extraversion ($r = .48$, $p < .01$), Agreeableness ($r = .19$, $p < .05$), and Conscientiousness ($r = .23$, $p < .01$), and negatively with Neuroticism ($r = -.25$, $p < .01$). No significant correlations were found between attachment factors and Openness to Experience (which in this study was

the only Big Five factor with poor internal consistency, i.e., $\alpha = .65$, and about which no predictions had been made).

Also as expected, IAW correlated significantly with the same traits, but in reversed direction. Thus IAW was positively linked to Neuroticism ($r = .38, p < .01$), and negatively to self-esteem ($r = -.35, p < .01$), TEIQ ($r = -.52, p < .01$), Extraversion ($r = -.40, p < .01$), Agreeableness ($r = -.36, p < .01$), and Conscientiousness ($r = -.34, p < .01$).

Below the correlational diagonal, Table 5.5 reports the correlations between the two attachment factors and other constructs found in Study 1. Note that the measures employed in that study were not identical to those used here (for instance, the TEIQ comprised 30 rather than 8 questions), and that the sample size was almost twice as large in the present study. A quick comparison between past and present associations suggests that the modified, currently employed measure of attachment exhibits superior construct validity in regards to established traits. As shown, secure attachment at work is related to adaptive traits whereas the opposite is true for insecure attachment at work.

In addition, recent trauma or loss experience was significantly, positively correlated with Neuroticism ($r = .27, p < .01$) and with insecure attachment at work ($r = .24, p < .01$), and significantly, negatively correlated with self esteem ($r = -.16, p < .05$), Extraversion ($r = -.18, p < .01$) and secure/autonomous attachment at work ($r = -.14, p < .05$).

The correlation between AAW and TEIQ was particularly strong in the present study. In fact, AAW and TEIQ seem largely interchangeable in terms of their correlations with personality traits and self-esteem. This is consistent with the results of

Study 4, where TEIQ was found to mediate the link between various personality variables and both attachment factors. To replicate these results, mediational analyses (Baron & Kenny, 1986) were carried out on the present data; results are summarised in Table 5.6.

Table 5.6: Summary of Mediational Results

	Mediator: TEIQ			Sample fit statistics (SEM)	
	β for mediator (TEIQ)	β for predictor without mediator	β for predictor with mediator	AGFI	CFI
<i>Criterion: SAAW</i>					
Self-esteem	.53**	.32**	.05	1.00	1.00
Neuroticism	.56**	-.25**	-.00	1.00	1.00
Extraversion	.41**	.48**	.23**	.80	.94
Agreeableness	.54**	.19**	.07	.99	1.00
Conscientiousness	.55**	.23**	.02	.99	1.00
<i>Criterion: IAW</i>					
Self-esteem	-.46**	-.35**	-.12	.94	.98
Neuroticism	-.44**	.38**	.18*	.86	.95
Extraversion	-.43**	-.40**	-.14	.89	.97
Agreeableness	-.47**	-.36**	-.26**	.66	.76
Conscientiousness	-.45**	-.34**	-.17**	.98	1.00

Note: $N=211$. SAAW = Secure/autonomous attachment at work; IAW = Insecure attachment at work; TEIQ = Trait emotional intelligence; SEM = structural equation model; AGFI = adjusted goodness-of-fit index; CFI = comparative fit index; all β are standardised; * $p < .05$, ** $p < .01$.

As seen, TEIQ fully mediated the links between SAAW and self esteem (i.e., the β coefficient for the direct relationship between self esteem and SAAW dropped from .32 to .05), Neuroticism (β reduced from -.25 to -.00), Agreeableness (β reduced from .19 to .07), and Conscientiousness (β reduced from .23 to .02), whilst partially mediating the link between SAAW and Extraversion (β reduced from .48 to .23). Moreover, the links between IAW and self esteem (β reduced from -.35 to -.12) and Extraversion (β reduced from -.40 to -.14) were fully mediated by TEIQ, which also partially mediated the links

between IAW and Neuroticism (β reduced from .38 to .18), Agreeableness (β reduced from -.36 to -.26), and Conscientiousness (β reduced from -.34 to -.17).

SEM was used to estimate the fit of each mediational model. All models predicting SAAW (through TEIQ as mediator) fitted the data well, i.e., χ^2 (1, $N = 211$) = .63, $p > .05$, AGFI = 1.00, CFI = 1.00 for self-esteem; χ^2 (1, $N = 211$) = .04, $p > .05$, AGFI = 1.00, CFI = 1.00 for Neuroticism; χ^2 (1, $N = 211$) = .12, $p > .05$, AGFI = .80, CFI = .94 for Extraversion; χ^2 (1, $N = 211$) = 1.58, $p > .05$, AGFI = .99, CFI = 1.00 for Agreeableness; and χ^2 (1, $N = 211$) = .12, $p > .05$, AGFI = .99, CFI = 1.00 for Conscientiousness. The same was not true when the criterion variable was IAW, as good fit was found only for self esteem [χ^2 (1, $N = 211$) = 3.00, $p > .05$, AGFI = .94, CFI = .98] and Extraversion [χ^2 (1, $N = 211$) = 3.74, $p > .05$, AGFI = .89, CFI = .97], whereas the models with Neuroticism [χ^2 (1, $N = 211$) = 7.56, $p < .01$, AGFI = .86, CFI = .95], Conscientiousness [χ^2 (1, $N = 211$) = 7.46, $p < .01$, AGFI = .98, CFI = 1.00], and, in particular, Agreeableness [χ^2 (1, $N = 211$) = 20.4, $p < .01$, AGFI = .66, CFI = .76] showed poor fit. In sum, these results indicate that TEIQ is a particularly strong mediator of the effects of personality and self esteem on secure/autonomous attachment at work, but less important when it comes to explaining the association between insecure attachment at work and personality.

Job Performance and Incremental Validity

Table 5.7 reports the analyses of the hierarchical regressions predicting job performance, including the bivariate Pearson correlation coefficients (R) between job performance and individual predictors. This combined both stepwise and multiple entries in order to test whether attachment factors had incremental validity over and above

ratings of participants' potential (entered as the single predictor in step 1), the four significant Big Five correlates of job performance (i.e., Neuroticism, Extraversion, Openness, and Conscientiousness), self esteem, and TEIQ (all entered as stepwise predictors in step 2), and the two attachment factors in the final step. Not shown in Table 5.7 are self esteem, Openness, Neuroticism, Agreeableness, and Extraversion, which were excluded from the stepwise analysis because they contributed insufficient additional variance. The stepwise regression also separated Conscientiousness and TEIQ into two different steps as both variables contributed unique variance in job performance.

Table 5.7: Incremental Validity: Summary of Regression Analyses Predicting Job Performance

Method	Variables	r	ΔR^2	R^2	df	ΔF	(step 2)		(step 3)		(step 4)		t
							β	SE	β	SE	β	SE	
1 Simple	Potential	.31**	.09	.09	1, 159	17.35**							4.16**
2 Stepwise	Potential	.31**	.21	.20	2, 158	22.21**	.23	.03					3.13**
	C	.47**					.34	.04					4.71**
3 Stepwise	Potential	.31**	.24	.22	3, 157	5.86*			.20	.03			2.63**
	C	.47**							.29	.04			3.78**
	TEIQ	.36**							.18	.05			2.42*
4 Multiple	Potential	.31**	.27	.24	5, 155	3.12*			.15	.03			2.08*
	C	.47**							.28	.04			3.64**
	TEIQ	.36**							.05	.04			.43
	SAAW	.37**							.21	.07			2.32**
	IAW	-.32**							-.04	.09			.44

Note: $N = 172$; C = Conscientiousness; TEIQ = Trait emotional intelligence; Potential: supervisor's prediction; SAAW = Secure/autonomous attachment at work; IAW = Insecure attachment at work. In all steps criterion variable was job performance; * $p < .05$, ** $p < .01$; all β values are standardised; r = bivariate Pearson correlation coefficient

Overall, results showed that ratings of potential significantly accounted for 9% of the variance in job performance (step 1), that Conscientiousness explained an additional 12% of the variance in attachment (step 2), whilst TEIQ increased the overall percentage of variance accounted for by an additional 3% (step 3). The incremental validity of attachment factors was supported in step 4, where the overall variance increased by an additional 3%, totaling 27%. Furthermore, TEIQ was no longer a significant predictor of job performance, showing that, once attachment is taken into account, TEIQ no longer explains variance in job performance. It should also be noted that SAAW, but not IAW, was a significant predictor in the model.

In line with recent guidelines for incremental validity testing (Hunsley & Meyer, 2003), the shared over simple effects (SOS) were calculated to estimate the unique contribution of secure attachment in the prediction of job performance. As potential, Conscientiousness, and TEIQ explained 24% of the variance combined, SAAW on its own explained 14% (R^2), and the combined variance explained between potential, Conscientiousness, TEIQ and SAAW was 27%, the unique contribution of SAAW was 3%, and the shared effect was 9% ($14-3$). Thus, the SOS computation indicates that 64% ($9/14 \times 100$) of the variance in job performance predicted by SAAW is shared with Conscientiousness, potential, and TEIQ. Whilst an SOS value of 64% may seem large, it should be noted that the contribution of SAAW is judged against a combination of multiple instruments. Thus a more accurate comparative indicator would derive from obtaining the SOS value between Conscientiousness (the most established trait predictor of job performance) and SAAW. The combined variance between this trait and SAAW as predictors of job performance was 29%, with individual R^2 of 22% and 14% for

Conscientiousness and SAAW, respectively. This indicates that the unique effect of SAAW is 7%, whilst the shared effect is 15% (22-7). Accordingly, the SOS effect computation indicates that 32% ($7/22 \times 100$) of the variance in job performance predicted by secure/autonomous attachment at work is shared by Conscientiousness.

5.9 Discussion

For this study, the measure of attachment at work included additional items selected specifically for their ability to differentiate between two types of insecure attachment (anxiety and avoidance). Nonetheless, factor analysis once again identified two factors overall, here, in line with the previous attachment at work studies. These factors have once again labelled secure/autonomous attachment at work (SAAW) and insecure attachment at work (IAW). Of the 6 new items that loaded onto these two factors, 3 that were predicted to reflect anxious attachment style loaded onto the IAW factor. The other 3 new items loaded onto the SAAW factor; however, all of these—two expected to be associated with anxious and the other with avoidant attachment—were reverse-scored in the process. A two factor solution is certainly in keeping with findings, generally, in the line of adult attachment research that has tended to be conducted by social and personality psychologists (Shaver & Mikulincer, 2004); however, whether the AAW factors align with the underlying dimensions found in such research is less certain. Moreover, whether a two, as distinguished from three, factor solution reflects limitations of self-report measures of attachment, or differences in the constructs tapped in this type of research, versus in developmental and clinical adult attachment research that relies principally on the AAI, remains a subject of debate in the field (*ibid*).

Although a shorter measure of the Big Five personality traits was used in this study than in Studies 3 and 4, all predicted relationships between these traits and AAW were found; in addition, Conscientiousness was once again found to be significantly related to AAW. In the management literature Conscientiousness has regularly been found to be linked to performance (e.g., Salgado, 1997), and the attachment at work studies to date have relied on Conscientiousness as a surrogate, used to argue the case for the practical contribution of secure attachment at work. Here, however, the relationship between attachment at work and job performance has been investigated more directly, using the organisation's own measures of potential and performance, with significant results; it is hoped that this will capture the interest of organisational practitioners as well as attachment researchers.

These findings are at present limited to one managerial sample from one corporate environment. Within this sample, the model has clearly demonstrated a positive, statistically significant relationship between SAAW and performance. This is underscored by the results of mediational analyses, which reveal that TEIQ—in this instance measured using a simple, 8-item questionnaire—fully mediates the relationship between SAAW and all but one of the big five personality traits (and partially mediates that fifth one).

The results of this study first of all show that, within this managerial sample, a) secure/autonomous attachment at work predicts improved performance, and b) those aspects of personality associated with secure/autonomous attachment are almost wholly accounted for by trait emotional intelligence. These statistical findings do not address causality, but considered in the light of attachment theory, which is a developmental

theory, results of this study do suggest that longitudinal research in this area is warranted. in the light of the role that developing self concept is believed to play in the development of a distinct attachment orientation, the findings of a significant relationship between self esteem and attachment at work, also fully mediated by TEI, add weight to this interpretation.

In particular, statistical analyses of this study's findings reveal that SAAW makes a unique contribution to the prediction of performance, distinct from that made by Conscientiousness, the trait predictor of performance most widely recognised by business psychologists. Conscientiousness, however, is a personality trait and so, by definition, stable. If, as the theory suggests, attachment – including amongst adults, and at work – is not immutable, it may prove useful not only as a source of information that contributes to predicting performance, but as a focal area for management development that may *enhance* performance. It is hoped that these results will garner sufficient interest amongst attachment researchers and organisational practitioners, alike, to generate further investigations concerning the function of attachment at work.

Chapter 6. Conclusions

6.1 Introduction

In the introductory chapters (1 & 2) of this thesis, attachment theory (e.g., Bowlby, 1969/82, 1973, 1980; Ainsworth et al, 1978), measures (e.g., George et al, 1996; Hazan & Shaver, 1987), and the associated literature (see Chapter 2) were reviewed, with particular consideration given to adult attachment, as the backdrop for investigation into adult attachment at work. Relatively little empirical research has as yet been produced in this focal area. Such studies as have been conducted have tended to be point-in-time investigations in which extant categorical or dimensional measures of attachment, originally designed with non-work contexts in mind, were employed, and work-related correlates were examined. Whilst the findings of such studies have tended to support the premise that attachment does indeed operate in the workplace, this approach has left the rich terrain of attachment at work largely unexplored. In order to advance this line of inquiry, a psychometrically valid measure of attachment at work was required. In the light of likely barriers to organisational access for the conduct of such research, this measure had to be relatively simple, quick, and inexpensive to administer. Development and validation of such a measure has been the primary task of this thesis.

In seven studies, described in the preceding three chapters (3, 4, and 5), a construct referred to as ‘attachment at work’ was empirically investigated. In six of these studies, this investigation entailed use of a new self-report measure, the adult attachment at work questionnaire (AAW), and simultaneous validation of that instrument. Concurrent validity of the AAW in relation to extant measures of attachment was investigated in Studies 2 and 4; discriminant validity in relation to the ‘Big 5’ personality

traits was examined in particular detail, using the latter's most comprehensive measure, the NEO-PI-R (Costa & McCrae, 1992), in Studies 3 and 4; and incremental predictive validity—in relation to ratings of job satisfaction, job involvement, internal work motivation, assessed career potential, and job performance—was the primary focus of both Studies 6 and 7. Study 5 piloted a complementary, categorical measure of attachment at work rated by others, rather than self and, along with a self-report measure of the Big Five, employed another self-report questionnaire designed to assess the 'dark side' of personality. A table displaying the employment of measures across studies appears at the end of Chapter 2 (see Table 2.1). Specific findings of each study have been reported in their respective chapters; summary findings are considered below.

6.2 Overall findings

6.2.1 Construct validity. As first reported in Studies 1 and 2, where the AAW's construct validity was the primary focus, a two-factor solution was found; these factors were labelled Secure/Autonomous Attachment at Work (SAAW) and Insecure Attachment at Work (IAW). Given the novelty of this measure, the structure of the AAW continued to be tested throughout all of the studies via exploratory factor analysis and its construct validity was repeatedly tested. The same two-factor solution was consistently replicated across all studies where the AAW was employed. As a further, more robust, means of assessing the AAW inventory, confirmatory factor analysis (CFA) was applied to the overall data set, adding questionnaires that, in several instances, had been returned too late to be included in their respective study's analyses.

Table 6.1 reports means (*M*) and standard deviations (SD) for each of the 18 items from the AAW inventory based on the overall sample of $N = 904$. As seen, the highest

mean (5.78) was obtained for item 14, i.e., “I am comfortable having others depend on me at work,” whilst the lowest mean (2.20) was found for item 5, i.e., “I often worry that work colleagues do not really trust me.”

Table 6.1: Descriptive Statistics for all AAW items in Overall Sample

	<i>M</i>	<i>SD</i>
14) I am comfortable having others depend on me at work (SAAW)	5.78	1.18
8) I do not often worry about someone confiding too much to me at work (SAAW)	5.48	1.44
15) I can count on work colleagues to support me when I need them (SAAW)	5.30	1.23
1) I find it relatively easy to get close to others at work (SAAW)	5.10	1.28
2) I do not often worry about being left in the lurch at work (SAAW)	5.05	1.41
7) I am comfortable depending upon others at work (SAAW)	4.79	1.40
12) I want to be completely in tune with my boss (SAAW)	4.61	1.50
3) I find it difficult to allow myself to depend upon others at work (R) (SAAW)	4.53	1.53
9) I am somewhat uncomfortable depending upon others at work (R) (SAAW)	4.45	1.57
16) I find it difficult, in the workplace, to trust others completely (IAW)	3.55	1.65
6) I find work colleagues reluctant to be as open as I would like (IAW)	3.27	1.54
4) Top management is never there when you need them (IAW)	3.04	1.58
17) Often, work colleagues want me to be more open than I feel comfortable being (IAW)	2.86	1.44
18) I often feel that I’m on my own in this company (IAW)	2.67	1.65
10) I get nervous when anyone at work confides too much (IAW)	2.59	1.49
13) Work colleagues are sometimes put off by my desire to be on their wavelength (IAW)	2.45	1.22
11) I often worry that people will not want to stay on my work team (IAW)	2.30	1.41
5) I often worry that work colleagues do not really trust me (IAW)	2.20	1.35

N = 904, R = reversed item, SAAW = item loading onto secure/autonomous attachment across most or all studies, IAW = item loading onto insecure attachment across most or all studies

Standard deviations ranged from 1.18 (item 14) to 1.65 (items 16 and 18). It is worth noting that all items with a *M* > 4, listed at the top half of the table, tapped into SAAW, whilst items with *M* < 4, listed at the bottom half of the table, tapped into IAW. This indicates a central tendency whereby participants tended to score higher on what has herein been labelled secure/autonomous than on insecure attachment at work. This tendency, which was first found and reported in Study 1 (as discussed in Chapter 3), aligns with findings in the mainstream attachment literature regarding the distribution of attachment orientations, or styles, when assessed using categorical measures. In most

published attachment research where participants' attachment orientation is categorised, more than half of any given non-clinical sample tends to have been assessed as securely attached or as having an autonomous orientation toward attachment (e.g., Hesse, 1999).

Table 6.2 reports descriptive statistics for SAAW and IAW across studies/samples (with the exception of Study 5, which did not include the AAW inventory). Two between-subjects (independent level = sample, with 6 levels) One-Way Analysis of Variance (ANOVA) were carried out to test whether there were significant differences in the means of SAAW and IAW among the samples, and results showed that there were ($F(5, 898) = 3.23, p < .01$ for SAAW and $F(5, 898) = 5.59, p < .01$ for IAW). More importantly, post-hoc LSD comparisons revealed exactly where (in which samples) these significant differences occurred. As indicated by the superscripts in column 2 (from left to right), SAAW scores were significantly different in Study 4 than in all other studies; as is evident from looking at the means (fourth column from left to right), the SAAW mean was higher in Study 4 than in other studies. With regard to IAW, scores were significantly higher in Study 1 than in other studies, whilst Study 7 also differed significantly from Studies 2 and 3, i.e., IAW scores were significantly lower in Study 7.

Taken together these findings point to two conclusions. Firstly, although this overall sample is large enough in comparison to that of most attachment studies, there is sufficient fluctuation across different study samples to suggest that more data are needed before norms can be reasonably established or responsibly used in categorising individuals' attachment orientations using the AAW. Secondly, cross-sample differences invite speculation as to the reasons for these differences. Study 4, for example, comprised primarily a group of male managers who were receiving professional career counselling

in the context of having been made redundant. Perhaps this counselling support—which would have been a first experience of counselling for many of these individuals—accounts for their tendency toward relatively high level of security in relation to attachment at work (as well as relatively high self-esteem) despite their recent experience of job loss (see Study 4). The samples for Study 3 and Study 7 were drawn, respectively, from one business in the publications/education industry and another in the hospitality industry.

Table 6.2: Group (Sample) Differences in SAAW and IAW, following ANOVA and LSD Post-Hoc Comparisons

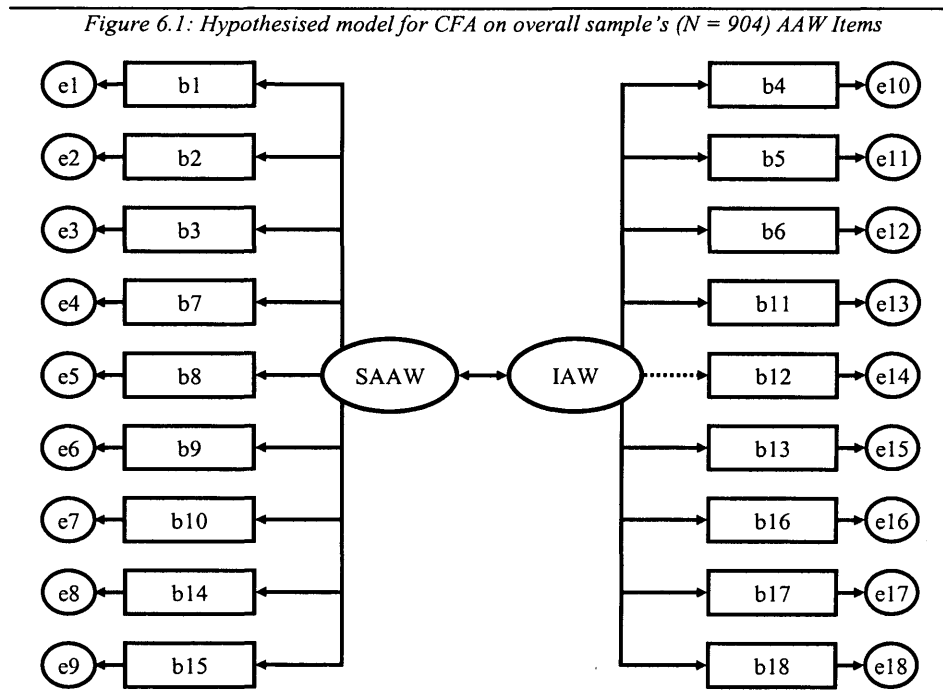
		<i>N</i>	<i>M</i>	<i>SD</i>	Minimum	Maximum
SAAW	Study 1 ⁴	117	45.10	6.88	23.00	61.00
	Study 2 ⁴	112	43.66	6.21	27.00	59.00
	Study 3 ⁴	241	45.01	7.03	29.00	63.00
	Study 4 ^{1, 2, 3, 6, 7}	100	47.23	6.37	30.00	61.00
	Study 6 ⁴	121	44.80	6.27	26.00	58.00
	Study 7 ⁴	213	45.09	6.24	26.00	58.00
	Total	904	45.09	6.60	23.00	63.00
<i>F</i> (5, 898) = 3.23**						
IAW	Study 1 ^{2, 3, 4, 6, 7}	117	27.94	11.38	10.00	56.00
	Study 2 ^{1, 7}	112	25.92	6.82	12.00	44.00
	Study 3 ^{1, 7}	241	25.01	7.16	9.00	43.00
	Study 4 ¹	100	24.39	6.04	12.00	42.00
	Study 6 ¹	121	24.66	7.62	9.00	52.00
	Study 7 ^{1, 2, 3}	213	23.51	6.66	9.00	48.00
	Total	904	25.03	7.74	9.00	56.00
<i>F</i> (5, 898) = 5.59**						

Note: Superscripts represent specific number of studies (sample) that differs significantly following LSD post-hoc comparisons; for example, for SAAW, study 4 was significantly different from studies 1, 2, 3, 6, and 7, whereas for IAW, study 1 differed significantly from studies 2, 3, 4, 6, and 7.

Although it would be premature to frame interpretations, statistical differences between these two samples suggest that the AAW may tap into a construct that illuminates the interface between individuals and the organisational ‘cultures’ or

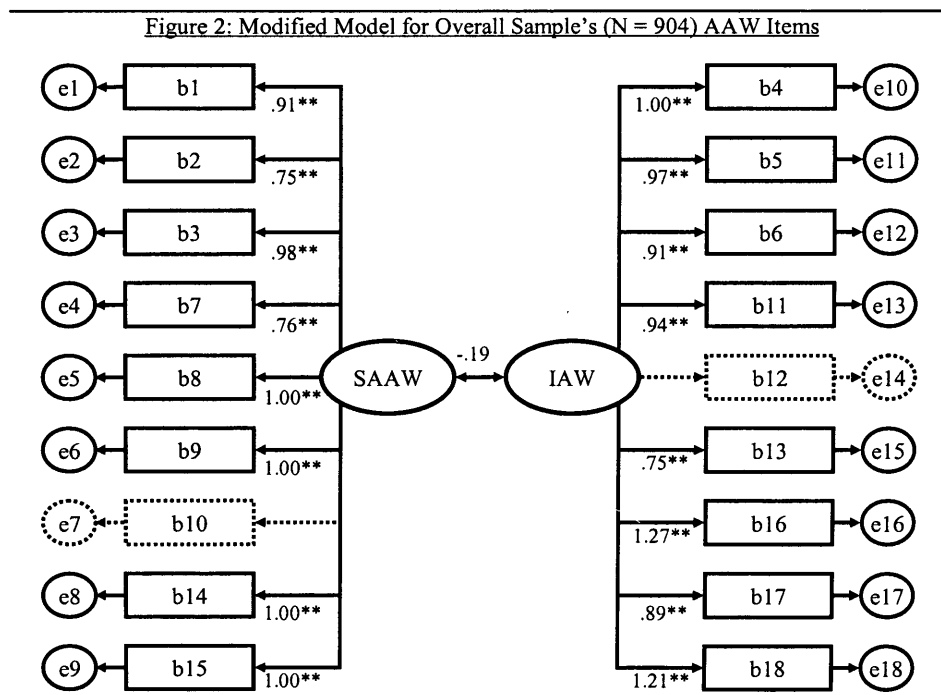
‘climates’ where they work; in short, further research comparing attachment orientation at work in the aggregate, across job groups, functions, and types of business is warranted.

In order to examine the fit of the 2-factor AAW model shown in Figure 6.1, CFA was carried out via AMOS (Arbuckle, 1999; Byrne, 2001). As seen, this model hypothesised two distinct but related factors, each measured through nine items (b1, b2, b3...) with their corresponding error variances. (For a full description of items please refer to Table 6.1.)



Overall, the fit for this model was adequate, i.e., $\chi^2 (134, N = 904) = 847.09$, $p < .01$, AGFI = .87, CFI = .88 (just short of AGFI = .90 and CFI = .90, which are indicative of a well-fitting model, Bentler, 1992), PNFI = .74 (which is considered acceptable, Byrne, 2001), and RMSEA = .07 (RMSEA < .05 indicates good fit, whereas RMSEA <

.08 represents reasonable errors of approximation in the population, Browne & Cudeck, 1993). All individual parameter estimates exhibited correct sign and size and were consistent with the hypothesized model. However two parameters (b10 and b12) were only marginally significant and were therefore removed to improve model fit. The modified model, shown in Figure 2 (eliminated items are depicted with dotted lines), fit the data well, i.e., $\chi^2 (103, N = 904) = 710.09, p < .01$, AGFI = .90, CFI = .90, PNFI = .76, RMSEA = .06. The modified model only marginally improved the level of fit, but this indicates that items b10 and b12 are not necessary in the AAW inventory. As additional data are gathered, to the point where norms can be established with confidence, it would seem sensible to continue to employ the 18-item inventory, with the intention of retesting for goodness of fit of both models once the aggregate sample size has adequately increased (say, $N = 2000$).



The correlation between SAAW and IAW was $r = -.19$, $p < .01$, which is considerably lower than the one reported in most individual studies across this thesis (typically $r = -.40$). The correlation found here accounts for error measurement and is based on $N = 904$. Thus SAAW and IAW are clearly two distinct factors and not two opposite extremes of the same underlying dimension (a correlation of $r = -.19$ suggests an overlap of less than 4% of the variance between SAAW and IAAW). The Cronbach α 's for SAAW and IAW were .71 and .77, respectively. There was no significant correlation between gender and either SAAW ($r = -.05$, $p > .05$) or IAW ($r = .01$, $p > .05$), and age was significantly correlated with SAAW ($r = .17$, $p < .01$), but not with IAW ($r = .01$, $p > .05$). Thus, in an overall sample that was 53% female and 47% male, with mean age 44, $SD = 11$, older people tended to be more secure, at least in terms of their attachment orientation at work.

As discussed in the introductory chapters of this thesis, within the personality and social psychological sub-strand of the attachment literature a plethora of adult attachment measures have been developed to assess romantic partner and/or other personal dyad attachment relationships. Bartholomew's (1990) two-by-two model of attachment, and Brennan et al's (1998) factor analysis of "virtually all self-report attachment style measures" then available, which found a two factor solution, precipitated what has been described as increasing consensus amongst such researchers about the existence of two underlying dimensions of attachment (Nofle & Shaver, 2006). Brennan et al (1998) called these dimensions 'attachment-related anxiety' and 'attachment-related avoidance.' Measures that have been developed to tap these two dimensions (including the RQ, as

applied in Study 4, and other self-report measures such as the Experiences in Close Relationships (ECR) questionnaire developed by Brennan et al (ibid), yield scores on two subscales, which may be thought of as two distinct, but not opposite, pulls away from secure attachment, one involving fear of rejection and of abandonment (anxiety) and the other involving discomfort with closeness and with dependency (avoidance).

Structurally, the AAW has also been shown to operate along two orthogonal dimensions. However, rather than representing two pulls away from attachment security (at work), the constructs tapped by this measure are more accurately conceptualised as, on the one hand, a pull away from attachment security at work, labelled IAW, and on the other hand, from a different but not opposite direction, a push toward attachment security at work, labelled SAAW. Moreover, content analysis of the AAW items does not obviously support the conclusion that IAW fully maps onto just one form of insecure attachment, nor that SAAW is a mirror image of the other. This interpretation is supported by findings, from Study 4, about the relationship between the AAW and the RQ, showing a moderate (positive) correlation between IAW and anxiety and a moderate (negative) correlation between SAAW and *both* RQ dimensions. That said, Study 4 had the smallest sample of the seven studies included in this research, just 100 participants. Also, most participants were males (77%), most were in a career transition, and, as noted earlier in this chapter, SAAW mean scores were significantly higher for this sample than in other attachment at work studies, indicating that in at least some respects this was not a representative sample. Moreover, some attachment researchers have questioned the reliability of the RQ or noted the increased precision of one or another more recently

developed dimensional self-report measure of attachment (Klohn et al, 2005; Nofle & Shaver, 2006).

6.2.2 Discriminant validity. Studies 1 and 2 endeavoured to replicate, with the AAW, findings from earlier romantic attachment research regarding the relationship between attachment and personality. Specifically, Shaver and Brennan (1992) used a three-category self-rating measure of romantic attachment (Hazan & Shaver, 1987) and a then-current measure of the “Big Five” personality traits, NEO-PI (Costa & McCrae, 1985), and found systematic associations between the two measures, while also finding that attachment ratings proved better predictors than personality traits of relationship outcomes over time. As observed by Nofle and Shaver (2006), this study was “important in the history of adult attachment research, because it was interpreted as a license to pursue attachment theory as a conceptual framework that was not easily or completely assimilated to the Big Five framework” (ibid, p. 180).

In Studies 1 and 2, replications of Shaver and Brennan’s (ibid) findings were attempted, employing the AAW and a more current, short-form measure of the Big Five, namely the NEO-FFI (Costa & McCrae, 1992). Results of these initial attachment at work replications were reasonably successful; in Study 1, predictions that attachment security at work would be significantly (negatively) associated with Neuroticism and significantly (positively) associated with Extraversion and Agreeableness were partly confirmed and, where not confirmed, were in the predicted direction; in Study 2, these same predictions were wholly confirmed (see Studies 1 and 2 for details). In addition, and not predicted, Study 1 found a significant (positive) association between IAW and

Openness to Experience, and Study 2 found a significant (negative) association between IAW and Conscientiousness.

Nofle and Shaver (2006) subsequently reviewed a number of studies conducted since the 1992 study, in which a variety of attachment measures and different measures of the Big Five were used to investigate relationships between attachment and personality. They reported that, in general,

attachment security is moderately negatively correlated with neuroticism and moderately positively correlated with extraversion and agreeableness, modestly positively correlated with conscientiousness, and not correlated with openness. Attachment anxiety is moderately to strongly correlated with neuroticism and not correlated with openness. The relation of attachment anxiety to the other three dimensions is less certain; it has been modestly correlated with extraversion, agreeableness, and conscientiousness in some studies, but just as often *not* significantly correlated with these dimensions. Attachment avoidance has been modestly to moderately correlated (negatively) with extraversion and agreeableness, but not correlated with openness. Some studies, but not others, have found avoidance to be positively correlated with neuroticism and negatively with conscientiousness. (Nofle & Shaver, *ibid*, pp. 184).

For this thesis, Study 1 and 2 findings in relation to Openness and Conscientiousness, in particular, generated interest in a more detailed investigation of the relationship between attachment at work and personality, both to attain a more fine-grained assessment of the relationship between these two, and to tease out possible differences between the ways in which attachment at work, as distinguished from romantic attachment, may be associated with personality. There is growing consensus that Openness to Experience can be broken down into two distinct components, namely intellectual ability vs. aesthetic interests (Chamorro-Premuzic & Furnham, 2005). The relative associations of these two components with attachment security at work warranted investigation, achieved through examination of Openness sub-facets. Conscientiousness, on the other hand, is a widely recognised managerial 'barometer' (e.g. Salgado, 1997).

Thus, the three studies described in Chapter 4 all employed the long-form NEO-PI-R (Costa & McCrae, 1992), which includes six ‘primary facet’ subscales for each of the Big Five traits. To assess attachment, two of these studies, Studies 3 and 4, employed the AAW, and Study 4 also utilised the RQ (Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994).

In addition to their review of the extant literature on attachment and the Big Five personality traits, Nettle and Shaver (2006) re-examined the relationship between these two, in part by conducting a study in which they employed a two dimensional measure of romantic attachment, the ECR (Brennan et al, 1998) as their measure of attachment, and the NEO-PI-R (Costa & McCrae, 1992) as their measure of the Big Five. Comparing their findings with Study 4 results using the RQ reveals considerable synergies; the biggest differences are that whereas they report (with some surprise) obtaining no correlations with Agreeableness, in Study 4, RQ Avoidance achieved a moderate correlation with Agreeableness, and whereas they found moderate correlations, on both ECR dimensions, with Conscientiousness, in Study 4, the RQ had no significant association with Conscientiousness on either dimension—although IAW did (negatively). Across the two studies, findings in relation to Openness were similar for the ECR and RQ; avoidance was moderately and negatively associated with Openness with both of these attachment measures. In contrast, in Study 4 SAAW and IAW both had significant relationships (in opposite directions) with Openness, suggesting that the AAW may be more effective at tapping into Openness to Experience than either of the non-work attachment measures.

Overall, findings indicate that there are consistent and theoretically meaningful relationships between attachment at work and the Big Five personality traits, and that—as with Shaver & Brennan’s (1992) earlier research, and Nofle and Shaver’s (2006) more recent research investigating romantic attachment and the Big Five—attachment at work is not wholly assimilated by the Big Five framework. In investigating the relationship between attachment at work and personality, of particular interest was the discovery, in Study 4, of the mediational role played by trait emotional intelligence. In this study, mediational analyses (Baron & Kenny, 1986) showed that the link between Neuroticism and SAAW was fully mediated by TEIQ, suggesting that high Neuroticism may lead to low SAAW *only* because high Neuroticism reduces TEIQ (see Figure 4.2). Self esteem and emotional intelligence have generally been found to be linked; indeed, it has been proposed that TEI is best conceptualised as “emotional self-efficacy” (Petrides, Furnham & Frederickson, 2004), which is consistent with the self-report nature of TEI scales (designed not to measure objective skills, but people’s perceptions of their emotional skills). In the Study 4 sample, where self esteem tended to be particularly high relative to the norm, the mediating relationship of TEI is thus particularly apparent.

Validation of a new measure such as AAW virtually required investigation of its relationship with the Big Five. The five personality traits are widely regarded as the most accurate overarching framework currently available to identify between-person personality differences. For any new individual differences measure, it is important to determine—as has been shown, here—that the new measure is not in fact the Big Five variables ‘in different attire.’ That said, as Study 5 findings suggest, assessment of the relationship between attachment at work and the ‘dark side’ of personality, using HDS

(Hogan & Hogan, 1997), may generate insights of particular interest and usefulness to organisational researchers and practitioners. The interpretation of the AAW offered in the discussion of construct validity, above, asserts that IAW taps into insecure attachment at work but does not discriminate between types of attachment insecurity (e.g., between anxious-ambivalent/preoccupied vs. avoidant/dismissing attachment). It may be that application of HDS, in conjunction with AAW, would provide clues enabling more precise discrimination between types of attachment insecurity at work. A prerequisite of any such investigation—and certainly any related intervention—would be to give careful consideration to the theoretical premise that, unlike personality, attachment orientation, including in adults, is to some degree and in some circumstances mutable.

6.2.3 Incremental Validity. The primary aim of the final two studies in this thesis, presented in Chapter 5, was to investigate the predictive validity of the AAW in relation to work-related ‘outcome’ variables, including self-report measures of job satisfaction and other aspects of work gratification (in Study 6), career potential (in Study 7, assessed by trained HR professionals employed by the same company as the individuals being assessed), and job performance (also in Study 7, assessed by participants’ line managers). In both studies, attachment at work was found to make a significant, unique contribution to the job-related criterion variables under examination. Specifically, in Study 6, in the hierarchical regression analysis, adding attachment at work, in step 2, to Neuroticism, Conscientiousness and self esteem, which were the significant correlates of the work gratification factor, doubled the percentage of variance accounted for, from 11% to 22%; the significant predictor in this model was IAW. Likewise, in Study 7, in analyses of hierarchical regressions where stepwise and multiple entries were combined in order to

test the incremental validity of AAW factors over personality and other individual difference variables, and of ratings of career potential and job performance, adding attachment at work, in the final step, increased predictive validity by 3%, to 27%, overall. Moreover, this analysis showed that, once attachment at work was included in the model, TEIQ no longer explained variance in job performance. In this case, SAAW, but not IAW, was a significant predictor in the model. Taken together, the findings of these two studies demonstrate the unique contribution of attachment at work as a predictor of variables of widespread interest to organisational researchers and practitioners, and make evident the merit of both AAW factors.

In a related study, Schirmer and Lopez (2001) investigated the relationship of attachment orientation to social support at work and work strain, and to job satisfaction, using self-report measures of each variable, including both the RQ (Bartholomew & Horowitz, 1991) and the ECR (Brennan et al, 1998) to assess attachment, and a modified measure of a job satisfaction scale originally developed by Quinn and Shepard (1974) to measure job satisfaction. Social support was operationalised as the participant's perception of supervisor support; work strain was conceptualised as an (inverse) indicator of job performance. As in Study 3 of this thesis, these authors approached a representative sample of employees from within one organisation (in their case, a large Midwestern university), but the eventual respondent sample, about 46% of those originally approached, may have incorporated a sample selection bias that affected study results. They found that, even after controlling for (perceived) supervisor support, adult attachment orientation made a unique and significant contribution to work stress, with attachment anxiety as the predictor; attachment was not found to enhance the prediction

of job satisfaction, although the pattern of job satisfaction means was in the predicted direction (Schirmer & Lopez, *ibid*).

The authors suggest that the lack of significant findings in relation to job satisfaction may be explained by the fact that all of their study's participants were employed at the same institution, tended to have been employed there continuously for several years, and tended to report relatively high levels of job satisfaction (*ibid*, p.29). In contrast, in Study 6, where participants were drawn from both the UK and the US, and were employed in a wide variety of organisations, attachment at work was found to increase substantially the prediction of work gratification, a factor underpinning 3 measures, of which job satisfaction, on its own, was the strongest contributor. Sampling differences may account for the contrasting results of these two studies with regard to the relationship between attachment and job satisfaction, as Schirmer and Lopez's interpretation of their own results suggest. Differences in the measures employed may also be an explainer. As it happens, the two studies' sample sizes were nearly identical ($N = 117$ in the earlier study; $N = 115$ in Study 6).

6.3 Limitations and criticism

The studies presented in this thesis have a number of limitations. In all but one instance, attachment at work was assessed using a new self-report measure (and measurement limitations for that one exception are discussed in the write-up of that study, Study 5). Even where the concurrent validity of this new measure was investigated (in Studies 2 and 4), this was done using other self-report measures of attachment. Hence, the usual criticisms of self-report measures all apply to these studies. Indeed, self-report measures of attachment, generally, have been criticised as they may

preclude assessment of adults' unconscious processes for regulating emotion, and thus may fail to relate to the psychodynamic processes of interest to Bowlby (e.g., Shaver & Mikulincer, 2004). Whilst Shaver and Mikulincer offer an admirable defence of self-report measures of attachment (ibid), so long as this debate continues, such measures—including, now, the AAW—remain vulnerable to such criticism.

Moreover, although the studies reported in this thesis introduced the AAW as a brand new measure, the inventory was not once subjected to an assessment of test-retest reliability. This was not so much an oversight as a constraint associated with organisational research; a request was made, to each of the two intact organisations where the AAW was applied (Studies 3 and 7), to re-administer the questionnaire, but in each instance the respective organisation's gatekeeper was concerned that this would be perceived as overly burdensome to employees already under substantial work-related pressures. Indeed, in a third instance (Study 5), even having this 18-item questionnaire completed once, during the several months while that study was underway, proved too difficult, resulting in some particular measurement limitations in that study, as discussed therein.

A further limitation is that, in most of the studies in this thesis, self-report measures were used for both independent and dependent variables; the only fully successful exception to this was in the case of the work outcome measures in Study 7. (As described in Study 5, the Career potential measure used therein was completed by professional assessors, but relied in part on other measures for which the study participants had, themselves, been the respondents.) Obtaining others' perceptions on the AAW inventory itself clearly would have been useful, and in particular would have

helped to allay concerns about the limitations of self-report measures; some efforts were made to conduct a study of this sort, but no organisation was found that was willing to sponsor such research with a measure that had not yet been validated. The current research also would have been enriched by use of naturalistic observation methods, such as were imaginatively employed by Fraley and Shaver (1998) in their airport study of adult attachment dynamics in temporarily separating couples.

A very substantial limitation, which is also a criticism of much of the published research conducted in the adult attachment arena, is the point-in-time nature of the present studies. Such research design precludes investigation of the developmental aspects of attachment at work (or in other contexts), despite the fact that the ontogeny of attachment—including the circumstances that may lead to changes in attachment orientation, as well as the manifestations of these changes—is fundamental, according to the theory. Moreover, even though the studies presented here may fairly claim to have demonstrated the presence, and shed light on the function, of attachment at work, as long as attachment orientation continues to be treated as if it were a stable, personality-like trait, its utility to organisation practitioners is bound to be (and, indeed, should be) constrained.

Amongst the longitudinal research on attachment that *has* been conducted, one study—in conjunction with a thirty-year longitudinal research project that followed individuals from birth to adulthood (Sroufe et al, 2005)—is illustrative of the benefits of such research, and also has particular relevance, here. Collins and Van Dulmen (2006) investigated the impact of middle-childhood experiences on later functioning, including in early adulthood, at work. Middle-childhood is normally defined as between age 5 and

adolescence, and in this case was operationalised as ages 5 – 12; early adulthood as ages 18 – 25. The participants in this study were 162 individuals who had been followed from birth to, at the time of this investigation, age 23, in the Minnesota Longitudinal Study of Parents and Children. Because multiple measures of these individuals (and their family and, later, peer relationships) had been taken over the course of their lives, the researchers were able to illustrate how prospective assessments from the prenatal period to the mid--twenties could be used to test the hypothesis that experiences with regard to developmental tasks of middle childhood have predictive validity over and above relationships in infancy and early childhood and, further, subsume the variance contributed by adolescent relationships, in relation to competence in work roles.

Measures of competence in work roles were obtained through administration of a semi-structured interview about school and work, and a paper-and pencil questionnaire about work experience, both designed and coded by staff of the Minnesota Longitudinal Study.

The staff also created three 5-point rating scales for coding these data. The *career reflectivity scale* assessed the extent and complexity of the participant's thinking about a career plan. The *career exploration scale* dealt with the degree to which participants have explored possible career choices. The *career maturity scale* assessed the degree to which participants had thought about and evaluated their job or career goals. Reliabilities, as assessed by intraclass correlation coefficients, ranged from .74 to .84 (ibid, p. 31).

As reported by Collins and Van Dulmen,

to answer the question of what variables most consistently predict the competent negotiation of the transition to work in early adulthood, longitudinal path analyses were computed for each of the work outcomes (work reflectivity, work exploration, and career maturity). A model in which middle childhood peer competence directly predicted early adult work competence, while controlling for early childhood caregiving quality and adolescent friendship quality, represented the data well (RMSEA = .065). Middle childhood peer competence ratings significantly predicted early adult work competence ($\beta = .23$, $t = 2.25$). Neither

early care, adolescent family functioning, nor adolescent friendship quality were significant predictors of early adult status, despite significant associations between middle childhood peer competence and both early care and adolescent friendship quality (ibid, p.36).

The researchers further reported that the association between early supportive care and early adult work competence was reduced to nonsignificant after accounting for the effect of middle childhood peer competence (ibid).

The point of citing this study, in such detail, here, is to illustrate the complexity of attachment. The study's findings support the theoretical premise that attachment orientation develops along probabilistic lines, but also underscore the naiveté of assuming that adult attachment and associated performance can be wholly and directly accounted for by early childcare. Hence, the value of longitudinal research, and the need for caution when drawing conclusions from the findings of point in time studies.

6.4 Implications and future directions

This thesis has been concerned with application of attachment theory (e.g. Bowlby, 1969/82, 1973, 1980; Ainsworth et al, 1978) to the workplace. Despite this theory's many, wide-ranging research and clinical applications, and despite its early and continuing influence on policies affecting inpatient treatment of children and child welfare more generally, there is scant evidence of its use in relation to how adults interact in the workplace. This thesis aims to contribute to our understanding of attachment at work. Specifically, the empirical research presented in this thesis has involved development and validation of a self-report measure of attachment at work (AAW). This measure fits most obviously within the personality and social psychological sub-strand of the adult attachment literature, as one of numerous two-dimensional measures of attachment style, distinguished from other such measures by its focus on work

relationships rather than romantic partnerships or other personal relationships. This distinction should facilitate investigation of the relationship between different concurrently held models of attachment (e.g., Klohnen et al, 2005; Overall et al, 2003; Sibley et al, 2005).

However, the two factors that were consistently found in the validation studies presented in this thesis do not directly align with the two dimensions most frequently identified as underpinning other such measures (e.g. Brennan et al, 1998; Mikulincer & Shaver, 2003; Shaver & Mikulincer, 2004). The differences give pause, particularly because many of these measures—including the AAW—derive from Hazan and Shaver's (1987) categorical measure of romantic attachment. Whether the AAW is in fact tapping differently into the same overarching construct as the romantic attachment measures, or perhaps tapping a different, albeit related construct, is a question for future investigation. For now, the new measure may add to and complicate the debate as to whether all such measures tap into the same construct as, or a different one than, that assessed by measures preferred by developmental and many clinical psychologists concerned with attachment, most notably, for adults, the AAI (George et al, 1996).

A pilot effort to test the concurrent validity of the AAW against the AAI was not able to be completed, but (as described at the end of Chapter 2) revealed difficulties that may well be inherent in administering the AAI to individuals in management roles. Nonetheless, particularly now that the AAW has been employed in a number of validation studies, such an investigation, utilising the AAI, the AAW, and indeed, including other two-dimensional measures of romantic and/or other personal dyad relationships, could contribute to resolving this seemingly endless debate amongst

proponents of different approaches to the measurement of adult attachment. Use of the alternative, Q-sort system to analyse AAI results (Kobak, 1993) would further enable cross-measure, cross-dimensional comparisons. Sponsorship by a high-end 'outplacement' firm, of the sort where substantial assessment and transition counselling is part of the provision (and with organisational clients contributing to the research administration costs) would permit such research to be designed to address administrative and ethical concerns associated with use of the AAI, such as those surfaced in the pilot effort referred to earlier.

Since many organisations now utilise "360-degree" feedback as a component of management development, employment of an 'other' measure of the AAW, with which to compare self-report ratings, should not be too difficult to introduce in future organisational applications, particularly now that this inventory has undergone a modicum of validation. Obtaining comparison (self/other) perception data would be one means of addressing concerns about the limitations of self-report measures. Moreover, such an approach to assessing attachment at work could enable more precise investigation of the relationship between attachment and authority, specifically through administering a self-report version of the AAW to line managers, and a complementary, 'other' version to their respective direct reports.

From an application perspective—that is, from the perspective of organisational practitioners who might make use of the AAW—even once norms have been sufficiently well established to be applied at the individual level, this instrument is limited by its inability to differentiate between categories of insecure attachment at work (assuming that, as in other spheres, such differences are indeed manifest in the work environment).

Nonetheless, the AAW's brevity and relative ease of administration would make it a useful tool for preliminary assessment; this could in turn be followed by more in-depth assessment utilising a psychometric measure such as the HDS (Hogan & Hogan, 1997). Moreover, as noted earlier in this chapter, further research investigating associations between 'the dark side' of personality captured by the HDS and attachment at work would serve to complement the discriminant validity studies reported in Chapter 4. Furthermore, because attachment theory, unlike personality, focuses on social causes of attachment style, with the attendant premise that individuals' attachment styles are not immutable, in tandem these two assessment approaches could enable both diagnosis and determination of intervention methods most likely to effect desired changes.

In conjunction with such applied research on attachment at work, perhaps within the context of a set of high-end executive coaching assignments, another potentially valuable enhancement would entail assessment of managers' reflective functioning (e.g., Fonagy, Steele, Steele, Moran & Higgitt, 1991; Fonagy & Target, 2005). This is a specialist area that has been described as located at the intersection of attachment and psychoanalytic theories and cognitive neuroscience (Slade, 2005). An outgrowth of attachment research, its principle focus, to date, has been firstly on the adult's ability to be reflective about "memorialized childhood relationships with their parents," (ibid, p. 270), and latterly on the parent's capacity to reflect upon the child's internal experience (ibid). Degree of adult reflective functioning has been found to be associated with both parent's state of mind about attachment and infant attachment, and is considered a better predictor of infant attachment security than are global measures of parental sensitivity (e.g., Fonagy & Target, ibid). Reflective functioning has been linked to Bion's (1962)

concept of containment (e.g., Fonagy & Target, *ibid*); containment has elsewhere been identified as a fundamental function of formal authority (e.g., Heifetz, 1994; Miller, 1993). Engaging in research on reflective functioning in the arena of the work organisation thus seems a natural stepping-stone in the process of transporting attachment theory into the workplace.

The relationship hypothesised and found between trait emotional intelligence and attachment at work has both theoretical and practical implications. As discussed in Study 4, TEIQ was a key explanator of virtually all relationships found in that study. Although these relationships were statistical, not causal, attachment theory implies a causal relationship. Thus, if replication studies verify these findings, the practical implications for organisational practitioners may be substantial. Such replication research is not only warranted, but indications are that it may prove unusually painless, given the findings of Study 7. There, an 8-item measure of TEIQ was employed, but findings were, nonetheless, statistically significant. As this study also showed, although TEI was clearly associated with AAW factors, the unique variance of AAW predicted occupational outcomes better than TEI, another reason for practitioners to take an interest in attachment at work, alongside trait emotional intelligence. For those concerned with the development of emotional intelligence amongst managers, further replications of the investigations reported herein must surely be supplemented by longitudinal research.

As noted in the literature review chapter of this thesis, many attachment researchers themselves recognise that point in time studies of attachment invite simplistic conclusions and, as the basis for intervention, should be reviewed with caution. For better or worse, cautious review is not the usual approach of decision-makers in the sorts of

organisations where the studies presented in this thesis were conducted. There, the pressure of day-to-day delivery requirements is intense, making it difficult for managers to find time for reflection. Quick solutions are sought, lest the competition get ahead. If, as is hoped, the research presented in this thesis leads to further investigation of attachment at work, for such research to be of benefit to organisations and those who work in them, it therefore remains incumbent upon attachment researchers to translate their findings into credible, meaningful recommendations.

Appendix A

Work Relationships Categories, as these appeared in the WRC Questionnaire (see Study 5):

Secure:

An independent thinker who works well with others. Finds it relatively easy to build close relationships with colleagues. Is reliable. In a managerial role, prefers to take a consultative style, and readily delegates. Is approachable. Generates loyalty in others. Can be depended upon. Offers constructive feedback. Responds well to constructive criticism. Promotes an atmosphere of mutual trust and respect.

Dismissing:

Presents as self-reliant, with limited interest in friendships at work. Inclined to be somewhat wary of work colleagues. Takes own counsel; indeed, may prefer to operate solo. In a managerial role, tends to be directive rather than consultative. Does not relish having to give or receive close supervision. Tends to be more confident in own competence than in that of others; they must prove themselves. May generate respect, e.g. by taking tough decisions, but more rarely affection. Does not suffer fools.

Preoccupied:

Is keen to get on well with work colleagues, but may try too hard, inadvertently putting others off. As a manager, inclined to give mixed messages, e.g., over-managing; under-delegating. Willing to be approached, but then may be anxious or preoccupied rather than simply attentive. In principle an advocate of effective communication; in practice somewhat defensive when giving or receiving constructive criticism. Not necessarily indecisive, but a worrier.

Fearful:

Is one of those who may be lonely at the top; distrust tends to outweigh need for closeness. More self-protective than self-confident. Inclined to be risk averse. Lacks flexibility. Over-controlling as a manager. Any sign of disloyalty may evoke a hostile outburst. May go through the motions of giving and receiving feedback if formal mechanisms so require, but body language wards off efforts at constructive criticism or even positive personal feedback.

Note: A list of the 18 items included in the core Adult Attachment at Work (AAW) questionnaire used in most of the studies presented in this thesis may be found in Table 6.1, which also displays the descriptive statistics for these items, in the overall aggregate sample.

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